

IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA  
AT CHARLESTON

_____	x	
	:	
THE CITY OF HUNTINGTON,	:	Civil Action
	:	
Plaintiff,	:	No. 3:17-cv-01362
	:	
v.	:	
	:	
AMERISOURCEBERGEN DRUG	:	
CORPORATION, et al.,	:	
	:	
Defendants.	:	

_____	x	
	:	
CABELL COUNTY COMMISSION,	:	Civil Action
	:	
Plaintiff,	:	No. 3:17-cv-01665
	:	
v.	:	
	:	
AMERISOURCEBERGEN DRUG	:	
CORPORATION, et al.,	:	
	:	
Defendants.	:	

BENCH TRIAL - VOLUME 25  
BEFORE THE HONORABLE DAVID A. FABER, SENIOR STATUS JUDGE  
UNITED STATES DISTRICT COURT  
IN CHARLESTON, WEST VIRGINIA

JUNE 11, 2021

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1 PROCEEDINGS had before The Honorable David A.  
2 Faber, Senior Status Judge, United States District  
3 Court, Southern District of West Virginia, in  
4 Charleston, West Virginia, on June 11, 2021, at 9:00  
5 a.m., as follows:

6 THE COURT: Let me go over something here  
7 before we get on with the evidence.

8 We have the matter of scheduling the balance of the  
9 trial, and the plaintiffs have asked for a little more time.  
10 And I believe under all the circumstances that, that exist  
11 now that plaintiffs are entitled to a modest increase of  
12 their trial time.

13 So I plan to give you three more days, Mr. Farrell and  
14 Ms. Kearse.

15 The week of June the 21st that we had set aside for the  
16 break, or what we thought would be the end of the  
17 plaintiffs' case, is no longer available because of  
18 scheduling conflicts. So we'll still stand down that week.

19 So when we come back after that break on June 28th,  
20 which we had originally scheduled to begin the defendants'  
21 case, I'll give Monday through Wednesday, June 28th through  
22 30th, to the plaintiffs to complete their case in chief.

23 If there are any motions at the conclusion of the  
24 plaintiffs' case that require oral argument, we can do that  
25 on Thursday, the 1st of July.

1 I would then stand down through the holiday weekend and  
2 begin the defendants' case on Tuesday, July the 5th. And we  
3 can make up for lost time in either of two ways.

4 I had set aside July 28th to 30th to try another case,  
5 and that case has been continued. So those days are  
6 available. If the parties still want to have a break in the  
7 middle of the defendants' case, we could simply add the  
8 extra time on at the end which would be the week of August  
9 the 15th. So I hope that takes care of those --

10 Mr. Schmidt.

11 MR. SCHMIDT: Yes, Your Honor. We have one  
12 witness issue, at least one witness issue.

13 Dr. Gilligan is our pain expert, standard of care  
14 expert. He was set to be up front in the rotation. He's on  
15 vacation that week of -- that Your Honor said we would  
16 start. He's on a two-week pre-planned vacation.

17 So if we could confer with our team and with the  
18 plaintiffs, but we'd like to, if it's possible, try to find  
19 a way to bring him that week we were planning on having the  
20 case even if it's agreeable to the Court on that Friday.

21 THE COURT: Well, yeah, if you can work that out,  
22 we could take his testimony on the 1st or 2nd of July.

23 MR. SCHMIDT: Okay. I think he's -- I don't have  
24 the dates in front of me, but the Thursday I think he has  
25 surgery. The Friday he might be able to do it. So let me,



1 let me --

2 THE COURT: Those two days -- under my revised  
3 schedule, those two days would be open and we could do it on  
4 Tuesday or Wednesday.

5 MR. SCHMIDT: I think he's got surgery one, but  
6 the other we'll check and see. And if we can do that, then  
7 we'll bring him then.

8 THE COURT: Okay. Well, we'll do that.

9 MR. SCHMIDT: Thank you, Your Honor.

10 THE COURT: Okay. Dr. Mohr.

11 MR. ACKERMAN: Thank you, Your Honor. We're  
12 bringing in Dr. Mohr now.

13 **JAKKI MOHR, PLAINTIFFS' WITNESS, RESUMED THE WITNESS**  
14 **STAND**

15 THE COURT: Dr. Mohr, it's my duty to tell you  
16 what you already know. You're still under oath.

17 THE WITNESS: Yes. Thank you. Good morning.

18 BY MR. ACKERMAN:

19 **Q.** Good morning, Dr. Mohr.

20 Okay. Dr. Mohr, you testified yesterday that you  
21 reviewed documents from defendants and opioid manufacturers  
22 in the course of forming your opinions; correct?

23 **A.** Yes.

24 **Q.** And do those documents form the basis of the opinions?

25 **A.** Yes, they do.

1 Q. Let's look at a few of those documents --

2 A. Sure.

3 Q. -- to start off.

4 MR. ACKERMAN: Can I have P-43195?

5 May I approach, Your Honor?

6 THE COURT: Yes.

7 THE WITNESS: Thank you.

8 BY MR. ACKERMAN:

9 Q. Dr. Mohr, I've handed you what is marked as  
10 Plaintiffs' Exhibit P-43195. Is this a document that  
11 you relied on to form your opinions?

12 THE COURT: Ms. Wicht.

13 MS. WICHT: Good morning, Your Honor. I'm sorry  
14 to stand up so early.

15 We do object. I understand that, from conversations,  
16 that Mr. Ackerman is not necessarily seeking to admit this  
17 document. However, we do want to lodge an objection.

18 It's a document that was produced by Endo, obviously  
19 not a party who is here in the courtroom. We have  
20 objections on the basis of authenticity and relevance. And  
21 although, of course, experts are permitted to rely on  
22 documents that are inadmissible, that's only the case where  
23 the document -- the probative value of the document  
24 substantially outweighs any prejudicial effect that it may  
25 have.

1           And our view is that -- our argument is that this  
2           document with questions about authenticity and relevance  
3           does not meet that standard of even sort of helpfulness to  
4           the trier of fact. And we object to it being used with Dr.  
5           Mohr even as -- even for her to sort of walk through it.

6           The document isn't otherwise admissible and, so, we  
7           don't think she should be permitted to sort of sit on the  
8           stand and read it into the record to the Court.

9           THE COURT: Where are you going to go with this,  
10          Mr. Ackerman?

11          MR. ACKERMAN: Sure. And, Your Honor, it is not  
12          my intention to have the witness read any documents into the  
13          Court.

14          These are documents that our expert witness relied on  
15          in forming the basis of her opinion. For Rule 703, an  
16          expert is entitled to rely on evidence even if it's  
17          inadmissible. And she will testify as to what the document  
18          is, whether she relied on it, and why she relied on it.

19          MS. MCCLURE: And, Your Honor, to, to not take  
20          away from anything Ms. Wicht said, but to underscore the  
21          fact that in a litigation, you would often have a witness on  
22          the stand where there would be a bucket of documents that  
23          either have been admitted or are likely to be admitted in  
24          the future.

25          In this unique instance, we're going to have a bucket

1 of documents that in its entirety or nearly -- in its  
2 entirety, I believe, are never going to be admitted in any  
3 vehicle in any, in any -- they will never be evidence in  
4 this case. Our witnesses have been gone. None of these  
5 documents have been offered with any of our witnesses even  
6 if they had been produced by any of the defendants in the  
7 case.

8 All of the documents are never going to be admitted in  
9 the case as evidence. So we believe that this is a unique  
10 circumstance.

11 And while 703 does allow that balancing act, plaintiffs  
12 have the burden to establish that the probative value  
13 substantially outweighs the prejudice associated with the  
14 fact that we have no ability to question Endo witnesses on  
15 this. There's no -- no Endo witness is going to be in the  
16 trial. That's going to be the same for Purdue, Teva,  
17 Janssen.

18 None of the documents you're going to see today with  
19 Ms. Mohr are ever going to be evidence in this case. So we  
20 think this is a unique scenario. And I recognize that this  
21 document is not being offered for ABDC, but I do want to  
22 underscore that this is going to be a recurring theme  
23 throughout this entire examination today.

24 MR. ACKERMAN: So, Your Honor, if I may respond.

25 First of all, on probative value, I will take the first

1 page of this document off.

2 The second page has Cardinal Health's logo and says  
3 "Marketing Programs Overview."

4 I don't -- this is a marketing witness. This document  
5 obviously has probative value. She is testifying that it is  
6 the basis of her opinion. The vast majority of these  
7 documents were produced by defendants. Nearly all of them  
8 will have defendants' logos on them.

9 MS. MCCLURE: Your Honor, the vast majority --

10 MR. ACKERMAN: She's entitled --

11 MS. MCCLURE: I'm sorry. I thought you were  
12 finished. I'm sorry.

13 MR. ACKERMAN: She's entitled -- the witness is  
14 entitled to explain the basis for her opinion. I don't  
15 intend to have her read documents into the record. There  
16 may be certain portions of documents that we point to, but  
17 it certainly can't be the case, Your Honor, that the witness  
18 is -- that somehow some unspoken prejudicial value that I  
19 don't think has really been explained --

20 THE COURT: Ms. McClure, do you want to respond to  
21 that?

22 MS. MCCLURE: My response is going to be to the  
23 statement that the vast majority of documents have been  
24 produced by defendants. There are 15 documents that Mr.  
25 Ackerman has identified for use with this witness.

1 Approximately half of them were not produced by the  
2 defendant distributors who are sitting in front of you  
3 today.

4 And, so, regardless of the fact that it has a Cardinal  
5 logo on it, as Mr. Ackerman has suggested, we are not in a  
6 position to authenticate these documents. There is a  
7 fundamental reliability concern with using these documents  
8 with the witness which were produced by defendants who are  
9 not here today.

10 MR. ACKERMAN: So, Your Honor, --

11 MS. MCCLURE: And I defer to Ms. Wicht.

12 THE COURT: Let me hear from Ms. Wicht.

13 MS. WICHT: I would just add, Your Honor, on the,  
14 the probative value of the documents, there's virtually no  
15 probative value to them, whether or not they have corporate  
16 logos on them or not.

17 This witness is not going to offer any opinions about  
18 whether any of the items that were -- that are discussed in  
19 these documents were ever sent to any Cabell/Huntington  
20 pharmacy, prescriber, anything else. She's not offering any  
21 opinion about the effects that any of these documents might  
22 have had on anyone; pharmacy, prescriber, patient, or  
23 otherwise.

24 So the -- I would submit, Your Honor, that all that  
25 could be done with these documents is a simple narrative

1 recitation of what they are and what they say. And that's  
2 something that this Court has already said is not helpful to  
3 the trier of fact in terms of expert testimony.

4 MR. ACKERMAN: So let me --

5 THE COURT: Well, let me --

6 MR. ACKERMAN: There is an important record point  
7 to be made that I think is probably the one Mr. Majestro is  
8 whispering in my ear.

9 (Pause)

10 MR. ACKERMAN: He had a different point which I'll  
11 relay as well.

12 The first point I want to make is that, Your Honor, as  
13 Your Honor is aware, this is a bellwether case in an MDL.  
14 All of these documents were produced by other parties in the  
15 MDL. Defendants had access to all of them. It's not like  
16 we're bringing out new documents. They've all been on our  
17 exhibit list. They are part of the overall opioid  
18 litigation.

19 Also, Rule 403 (verbatim) in a bench trial, Your  
20 Honor -- I just want to make my record -- has very limited  
21 value. And there are Fourth Circuit opinions on that.

22 THE COURT: Well, under Rule 403 the witness -- an  
23 expert witness is entitled to base her opinion on matters  
24 that are not admissible. And it doesn't make the -- it  
25 doesn't make the underlying documents admissible. But if

1 she relied on them in forming her professional opinion, it  
2 seems to me that I can let her talk about them. And then  
3 it's up to me to decide whether their prejudicial value  
4 outweighs their relevancy. So I'm going to let you go  
5 ahead.

6 MR. ACKERMAN: Thank you, Your Honor. I think it  
7 was Rule 703.

8 THE COURT: What did I say?

9 MR. ACKERMAN: You said 403.

10 THE COURT: 403 was up here on the screen.

11 MR. ACKERMAN: Well, here I am making trouble  
12 again.

13 THE COURT: You see how bad I am, Mr. Ackerman.  
14 Go ahead, please.

15 MR. ACKERMAN: All right. With that aside, I  
16 assume, Your Honor -- I'll ask this question at the outset.  
17 I assume that the defendants will object if I want to  
18 publish any of these documents that we go through.

19 MS. WICHT: Yes, Your Honor.

20 MS. MCCLURE: Yes, Your Honor.

21 THE COURT: Well, if she relied on them in forming  
22 her opinion, she can refer to them. But I'm not sure they  
23 need to be published, Mr. Ackerman. We'll cross that bridge  
24 when we get to it. Go ahead, please.

25 MR. ACKERMAN: All right. Thank you. I just



1 wanted to get the ground rules set at the start.

2 THE COURT: Yes.

3 BY MR. ACKERMAN:

4 Q. Okay. So with that done, Dr. Mohr, do you have  
5 P-43195 in front of you?

6 A. Yes, I do.

7 Q. Okay. And is this a document that you relied on to  
8 form your opinion in this litigation?

9 A. Yes, it is.

10 Q. And what defendant does this document relate to?

11 A. Cardinal Health.

12 Q. And how do you know it relates to Cardinal Health?

13 A. The cover email actually mentions Cardinal Health  
14 people by name. And it also has an attachment called  
15 "Cardinal Health Manufacturer Marketing Services." And the  
16 inside has the Cardinal Health logo on it.

17 Q. And what -- why did you rely on this document?

18 A. When companies engage in marketing, they actually have  
19 to market what it is that they're offering. And in this  
20 case, Cardinal Health was offering a paid service to the  
21 pharmaceutical manufacturers to perform marketing on their  
22 behalf.

23 So this is a brochure that details the types of  
24 marketing services that manufacturers, in this case Endo,  
25 paid for them to perform.

1       **Q.**   And, Dr. Mohr, did you conclude whether Cardinal, in  
2       fact, provided marketing services to opioid manufacturers?

3       **A.**   No. The document that I'm looking at right here is  
4       merely a marketing brochure. And, so, it's not clear that  
5       this work actually was ever done based on a simple brochure.

6       **Q.**   Sure. And that was probably a bad question. Setting  
7       that document aside --

8       **A.**   Uh-huh.

9       **Q.**   -- in the overall penumbra of your work, did you  
10      conclude that Cardinal, in fact, provided marketing services  
11      to opioid manufacturers?

12      **A.**   Yes, I did.

13      **Q.**   Okay.

14               MR. HESTER: Let's go to the next document which  
15      is P-42701.

16               May I approach, Your Honor?

17               THE COURT: Yes.

18               THE WITNESS: Thank you.

19      BY MR. ACKERMAN:

20      **Q.**   And, Dr. Mohr, the same set of questions here. Is  
21      P-42701 a document that you relied on to form your  
22      opinion?

23      **A.**   Yes, it is.

24      **Q.**   And what defendant does this document relate to?

25      **A.**   McKesson.

1 Q. And what does -- why did you rely on this document?

2 A. Again, the title tells me that these are marketing  
3 services that McKesson is offering to the pharmaceutical  
4 manufacturers. It says "Brand Rx" where Rx is prescription,  
5 so this is the brand prescription marketing services that  
6 McKesson offers to the brand pharmaceutical manufacturers.

7 Q. Is there anything on the cover page of the document  
8 that you concluded indicated McKesson had a dedicated  
9 personnel who worked on manufacturer marketing?

10 A. Well, again, it says McKesson manufacturer marketing.  
11 In this particular case, most companies do have a team that  
12 performs this. I mean, there's a marketing department.

13 Q. And, Dr. Mohr, is this, like the other document, a  
14 brochure?

15 A. Yes, it is.

16 Q. Okay.

17 A. Yeah. Let me take that back. This is actually a  
18 PowerPoint presentation. And, so, this was prepared -- it's  
19 my, you know, educated opinion that this was delivered to  
20 one of the pharmaceutical companies to give them an overview  
21 of all these services. And, so, the second page actually is  
22 kind of like a Table of Contents of what those marketing  
23 services include.

24 Q. And, Dr. Mohr, putting this document aside, in the  
25 scope of your work did you conclude whether McKesson, in

1 fact, provided marketing services to opioid manufacturers?

2 **A.** Yes, they did.

3 MR. HESTER: Your Honor, objection. The term  
4 "opioid manufacturers" is not an appropriate term. These  
5 are not companies that only manufacture opioids. They're  
6 pharmaceutical companies that manufacture a range of  
7 products. It's a misleading question.

8 THE COURT: Well, can you rephrase your question  
9 to cover that, Mr. Ackerman?

10 MR. ACKERMAN: That sounded like a point for  
11 cross, but I'm happy to rephrase the question if it's the  
12 Court's preference. I think "opioid manufacturers" is a  
13 term that many witnesses have already used and --

14 THE COURT: Go ahead, Mr. Ackerman.

15 MR. ACKERMAN: I'll rephrase the question if  
16 that's the Court's preference.

17 BY MR. ACKERMAN:

18 **Q.** Dr. Mohr, did you, in fact, conclude that  
19 McKesson -- in the scope of your work, putting aside the  
20 document, did you conclude that McKesson, in fact,  
21 provided marketing services to pharmaceutical  
22 manufacturers who manufactured opioids?

23 **A.** Yes.

24 **Q.** Dr. Mohr, turn to slide 22 of this document.

25 **A.** Yes.

1 Q. Did you rely specifically on this page for any part of  
2 your opinion?

3 A. Yes. What was interesting to me about slide 22 is that  
4 it details that the services that McKesson offered would  
5 touch not only the retail pharmacists who were their direct  
6 customers in the supply chain, but they also offered  
7 services that would also touch and reach physicians and  
8 patients as well.

9 Q. You used the term "touch." Is that, is that your word?

10 A. It is my word. In marketing we refer to touch points.  
11 And touch points means that there's interaction or  
12 communication between two parties.

13 Q. But does the word "touch" also appear on this document?

14 A. Yes. It says, "McKesson manufacturer marketing touches  
15 key points in the healthcare continuum."

16 Q. So in your opinion, in this document was McKesson using  
17 marketing vernacular?

18 A. Absolutely.

19 Q. Thank you. You can put that document aside.

20 MR. ACKERMAN: Let's go to P-26091.

21 May I approach, Your Honor?

22 MS. MCCLURE: Your Honor, I maintain with respect  
23 to -- I'm sorry. With respect to this particular document,  
24 I note that there is -- there are many pages to this  
25 document. It's approximately, I don't know, 40 something

1 pages.

2 And contained within this document is a number of  
3 references to other companies under the AmerisourceBergen  
4 corporation umbrella. The defendant here in this particular  
5 case is AmerisourceBergen Drug Corporation, ABDC. We've  
6 heard it throughout the trial.

7 Throughout this document there are numerous mentions of  
8 other companies that are not part of ABDC. They are  
9 separately incorporated entities technically considered  
10 under the law to be affiliates. But liability against  
11 AmerisourceBergen Drug Corporation cannot be based on the  
12 conduct or alleged conduct of entities who are not parties  
13 to this case.

14 So I do, of course, note that this document is an ABDC  
15 produced document, meaning it was produced from ABDC's  
16 files. But as it comes to trial, I note that this document  
17 is full of many references to other entities that are not  
18 defendants in this case.

19 So, Your Honor, we believe liability against ABDC  
20 cannot be predicated under the laws of either Pennsylvania,  
21 which is where ABDC is located, the State of West Virginia,  
22 which is the forum state, the State of Delaware, which is  
23 where some of the other entities referenced throughout this  
24 document are incorporated or have their principal places of  
25 business.

1           And, so, we believe that the introduction of this  
2           document and its many, many references to non-ABDC  
3           defendants is prejudicial and we would object to its  
4           inclusion in this case.

5           THE COURT: Well, this is a document she relied on  
6           and I'll allow her to refer to it. And I think the point  
7           you raised is more appropriate for cross-examination than  
8           the exclusion of any reference to it.

9           So you can go ahead, Mr. Ackerman.

10           MR. ACKERMAN: Thank you, Your Honor.

11           BY MR. ACKERMAN:

12           Q. And, Dr. Mohr, I've handed you P-26091. Is this a  
13           document that you relied on in forming your opinion?

14           A. Yes, it is.

15           Q. Okay. And what defendant does this document relate to?

16           A. AmerisourceBergen.

17           Q. And why did you rely on this document?

18           A. As you can see on the cover sheet, they're requesting  
19           that the -- whoever these people are are called the suite of  
20           marketing services that these collective companies offer to  
21           the pharmaceutical manufacturers in order to have those  
22           services collectively reviewed by one of the top consultants  
23           in the world, McKinsey.

24           And they wanted to make sure that they could streamline  
25           all the offerings across these various companies in order to

1 both ensure consistent pricing to the manufacturers and to  
2 make sure that they were offering the most value to those  
3 manufacturers.

4 **Q.** Thank you. Now, Dr. Mohr, in the course of your work,  
5 putting this document aside, did you conclude whether  
6 AmerisourceBergen Drug Company's predecessor company, a  
7 company called Bergen Brunswick, provided marketing services  
8 to companies that manufacture opioids?

9 **A.** Yes.

10 **Q.** And, again, putting this document aside, did you  
11 also -- Dr. Mohr, did you also in the course of your work  
12 encounter evidence of any affiliates of AmerisourceBergen  
13 Drug Company providing marketing services to companies that  
14 manufacture opioids?

15 And I see that my colleague has stood up, so hold your  
16 answer until the objection.

17 **THE COURT:** This is your same objection?

18 **MS. MCCLURE:** It is my same objection. I  
19 understand Your Honor's ruling but feel the need to preserve  
20 the record on the fact that veil piercing has not been  
21 alleged in this case and liability cannot be based on  
22 affiliate conduct.

23 **MR. ACKERMAN:** It's the basis for her opinion,  
24 Your Honor. I'm sorry. Is the objection overruled?

25 **THE COURT:** You may proceed.



1 MR. ACKERMAN: Oh, thank you. I didn't hear you.

2 THE COURT: She's preserving her objection  
3 previously made, I believe, and it's overruled again and you  
4 may proceed.

5 MR. ACKERMAN: All right. Thank you.

6 BY MR. ACKERMAN:

7 Q. So, Dr. Mohr, let me repeat the question.

8 In the course of your work, did you encounter evidence  
9 of any affiliates of AmerisourceBergen Drug Company  
10 providing marketing services to pharmaceutical companies who  
11 manufacture opioids?

12 A. Yes.

13 Q. And who were the affiliates that, in your opinion,  
14 provided those marketing services?

15 MS. MCCLURE: Your Honor, may I just have a  
16 standing objection to this?

17 THE COURT: Yes.

18 MS. MCCLURE: Thank you.

19 THE COURT: Overruled. And you can have a  
20 continuing objection to this whole line of questioning.

21 MS. MCCLURE: Thank you, Your Honor.

22 BY MR. ACKERMAN:

23 Q. So, again, who were the AmerisourceBergen  
24 affiliates that -- who, in your opinion, provided  
25 marketing services to opioid manufacturers?

1       **A.**     Xcenda, I hope that I'm saying that correctly, and  
2       Lash.

3       **Q.**     Now, Xcenda is spelled X-c-e-n-d-a; is that correct?

4       **A.**     Yes.

5       **Q.**     And did you form an opinion as to what Xcenda is?

6       **A.**     From what I could glean, they were a specific unit of  
7       AmerisourceBergen that provides a very sophisticated suite  
8       of marketing services to the pharmaceutical manufacturers.

9       **Q.**     And when you say AmerisourceBergen, are you referring  
10      to AmerisourceBergen Drug Company or their parent company,  
11      AmerisourceBergen Corporation?

12      **A.**     Yes. So the way I look at this and, in fact, the way I  
13      teach it in my classes, is most corporate umbrellas have  
14      subsidiaries that work underneath them. And the idea is  
15      collectively all of these units work together to elevate the  
16      profits of the total corporation.

17             And, so, in this particular case -- you know, I always  
18      use a pretty friendly example like Disney. So if we're  
19      talking about, you know, the Disney theme park is one unit.  
20      Disney cruises is another unit. Disney merchandise is  
21      another unit. And they all work collectively to make sure  
22      that the brand is able to deliver consistent performance  
23      over time. And in this case, the brand is AmerisourceBergen  
24      as the umbrella.

25      **Q.**     Thank you. And you also mentioned Lash; is that

1 correct?

2 **A.** Yes.

3 **Q.** And what is -- I think it's called Lash Group. What is  
4 Lash Group?

5 **A.** It's another consulting unit that provided consulting  
6 services to the brand manufacturers for marketing.

7 **Q.** And how, if at all, did you conclude -- or, in your  
8 opinion, did you conclude whether Lash Group had any  
9 relation to AmerisourceBergen Drug Company?

10 **A.** If I recall correctly -- I need to look at my report --  
11 but what my recollection is is that there were multiple  
12 documents that also said ABC on them or related to  
13 AmerisourceBergen.

14 **Q.** Okay. I think we're grabbing a copy of your report, so  
15 we'll go back to that.

16 **A.** Thank you.

17 **Q.** Sure. Would --

18 MS. MCCLURE: Your Honor, to the extent we're  
19 handing out Dr. Mohr's report, we would object to the  
20 introduction of this report or the use of the report other  
21 than to refresh Dr. Mohr's recollection. And she has  
22 referenced she would need to see a copy of her report, but  
23 we would object to it being handed out, introduced, or used  
24 for anything other than refreshing her recollection.

25 MR. ACKERMAN: Your Honor, that's all I was going

1 to do was refresh her recollection. And if I can just go  
2 on --

3 THE COURT: You can't refresh until it's not  
4 there. I mean, you can't refresh it --

5 MR. ACKERMAN: I have to ask the questions. I  
6 understand that. I didn't have a chance to do it yet.

7 THE COURT: Okay. Go ahead.

8 MR. ACKERMAN: Okay.

9 BY MR. ACKERMAN:

10 **Q.** Dr. Mohr, did you at one point have an opinion as  
11 to how Lash Group was related to ABDC?

12 **A.** Yes.

13 **Q.** And would reviewing your expert report refresh your  
14 recollection as to what you concluded?

15 **A.** Yes.

16 MR. ACKERMAN: May I approach, Your Honor?

17 THE COURT: You've got to ask her the question  
18 first.

19 MR. ACKERMAN: I asked her the question earlier,  
20 but I can ask her again.

21 THE COURT: "Did you at one point have an opinion  
22 as to how Lash Group was related to ABDC?" She said, "Yes."  
23 And then you asked her -- you, you have to show she can't  
24 remember before you can refresh her recollection.

25 MR. ACKERMAN: I'm sorry, Your Honor. I thought

1 she had already answered, she had already said she didn't  
2 remember, but I'll ask her.

3 BY MR. ACKERMAN:

4 **Q.** Dr. Mohr, how is Lash Group related to ABDC?

5 **A.** I have listed them as a sister unit to the company.

6 MS. MCCLURE: And, Your Honor, I believe she's  
7 answered the question, so there's no need to hand out the  
8 report. And I would request that the report be taken back  
9 from the clerk.

10 THE COURT: I think that's right. You can't use  
11 it.

12 MR. ACKERMAN: That's fine.

13 THE COURT: You can't refresh her unless she needs  
14 to be refreshed, Mr. Ackerman.

15 MR. ACKERMAN: I agree, Your Honor.

16 BY MR. ACKERMAN:

17 **Q.** Dr. Mohr, did you form an opinion that  
18 distributors' marketing was of recent vintage or had it  
19 been on-going for a while?

20 **A.** The earliest documents that I reviewed in my report  
21 were from 1995, and they carried through to approximately  
22 2017. So that's a long period in my, my experience.

23 **Q.** Thank you.

24 MR. ACKERMAN: May I approach, Your Honor?

25 THE COURT: Yes.

1 BY MR. ACKERMAN:

2 Q. Dr. Mohr, I've handed you what's been marked as  
3 Exhibit P-8272. Is this a document that you relied on  
4 to form your opinions in this litigation?

5 MS. MCCLURE: So, Your Honor, with apologies, I am  
6 compelled to rise again. And this is a different type of  
7 objection, you'll be pleased to know, from the other ones.

8 As Your Honor is aware, the time period in this case,  
9 the relevant time period is from 2006 to 2018. Now, there  
10 have been instances where -- particularly with respect to  
11 Suspicious Order Monitoring Programs that had been in place  
12 pre-dating the 2006 time period, but carried over in their  
13 effectiveness into that effective time period of '06 to '18.

14 We've seen some older documents. We saw some yesterday  
15 with Joe Rannazzisi from 1998 about AmerisourceBergen's  
16 approval of its Suspicious Order Monitoring System.

17 However, here what we have, this is a document that was  
18 produced by Purdue. In the bottom right you can see the  
19 Purdue indicator. It is an internal memorandum to Purdue  
20 authored by someone G.R. Green. The date is in 1997.

21 And what this document appears to be is a summary of  
22 Purdue internal impressions of its relationships with four  
23 distributors.

24 And, so, there are significant authenticity concerns  
25 with this document. The relevance in the fact that it dates

1 from 1997 -- you'll note that Amerisource and Bergen are  
2 separate companies as referred to in this document. So this  
3 pre-dates the relevant time period by a substantial margin.

4 Moreover, this document is paradigmatic hearsay. The  
5 only reason that we would be looking at this document is, in  
6 fact, for what the, what the author of this memo, his  
7 personal impressions were of Purdue's relationships with  
8 these four distributors.

9 So there is significant reliability, authenticity,  
10 foundation, relevance concerns with this document in  
11 addition to, of course, the fact that it can't be admitted  
12 in the case. And I welcome my colleagues' comments as well.

13 THE COURT: Well, you're not offering it --

14 Ms. Wicht, do you want to say something?

15 MS. WICHT: I only was going to add one -- it's  
16 not an additional argument. I obviously agree with what  
17 Ms. McClure said, just a clarification on time period.

18 The time period that Ms. McClure identified is  
19 obviously correct. That's the time period for discovery. I  
20 just want to make clear that there's a disputed issue about  
21 what the relevant time period is for the claims in this case  
22 based on the statute of limitations that would actually be  
23 substantially shorter and even more recent than what  
24 Ms. McClure laid out.

25 MS. MCCLURE: And I join in Ms. Wicht's

1 clarification.

2 THE COURT: Well, if it's a document she relied on  
3 in forming her opinion and you're not offering it into  
4 evidence, I'll let you question her about it. I think all  
5 this goes -- you're not offering -- it all goes to the  
6 weight the Court is going to give her opinion. And it's a  
7 proper subject for cross-examination it seems to me.

8 MS. MCCLURE: Thank you, Your Honor.

9 MR. ACKERMAN: Thank you, Your Honor.

10 BY MR. ACKERMAN:

11 Q. Dr. Mohr, have you got P-8272 in front of you?

12 A. Yes.

13 Q. Is this a document that you relied on to form your  
14 opinion?

15 A. Yes, it is.

16 Q. And what defendant does this document relate to?

17 A. It relates to multiple defendants. It lists McKesson,  
18 Bergen Brunswig, Cardinal, as well as Amerisource.

19 Q. And as Ms. McClure stated, this is an internal Purdue  
20 memorandum; correct?

21 A. Yes.

22 Q. And, so, why did you rely on this document?

23 A. This document shows the important role of the  
24 distributors in the market success of the pharmaceutical  
25 manufacturers' products.



1 And, in particular, this was a critical time period,  
2 according to Purdue, in getting the wholesaler participation  
3 because the new programs that they were offering were going  
4 to be central to their success.

5 MR. HESTER: Object, Your Honor, on speculation.  
6 Move to strike that statement. The witness is speculating.

7 MR. ACKERMAN: Your Honor, I can cure that with  
8 one question.

9 MS. MCCLURE: And, moreover, Your Honor, we have  
10 an objection to the corporate conduct ruling that Your Honor  
11 made, ECF 1262, about the motives of any of the parties or  
12 non-parties.

13 THE COURT: Well, here again, she's explaining the  
14 basis of her expert opinion. And the weaknesses in this,  
15 which appear to me to be substantial, can be brought out on  
16 cross-examination. So I'll allow it. Go ahead.

17 BY MR. ACKERMAN:

18 **Q.** Dr. Mohr, was there something in this document that  
19 caused you to conclude that distributors played -- I  
20 think your word was an important part in the marketing  
21 of Purdue's opioid drugs?

22 **A.** Yes. There's details in the programs that the  
23 wholesalers were going to be offering. And the author of  
24 this document says in his own words, "Obstacles to our  
25 growth," meaning Purdue's growth, "lie predominantly with

1 our reluctance to spend money on these wholesaler programs."

2 The last sentence of the whole memo says, "With  
3 wholesaler friendly policies from us, we can expect programs  
4 that will be friendly and profitable to our company."

5 **Q.** Thank you. Dr. Mohr, in the course of your work, did  
6 you review any documents that referenced a glimmer button?

7 **A.** Yes. The document that I just reviewed mentioned a  
8 glimmer button.

9 **Q.** What is a glimmer button?

10 **A.** It appears to be an early precursor to what we now know  
11 as paid search. The idea was when a pharmacist searched for  
12 any of a competing product, the pharmacist could push a  
13 glimmer button on the distributor's website and Oxycontin  
14 advertising would appear.

15 **Q.** While Ms. Aguiniga is handing out this document, Dr.  
16 Mohr did you conclude whether any of the defendants or their  
17 predecessors here actually provided a glimmer button to  
18 Purdue in connection with marketing of Oxycontin?

19 **A.** Yes.

20 MR. ACKERMAN: May I approach, Your Honor?

21 THE COURT: Yes.

22 BY MR. ACKERMAN:

23 **Q.** Dr. Mohr, do you have P-43299 in front of you?

24 **A.** Yes.

25 **Q.** And is this a document that you relied on to form your

1 opinions in this case?

2 **A.** Yes.

3 **Q.** And what defendant does this document relate to?

4 **A.** Bergen Brunswig.

5 **Q.** And why did you rely on this document?

6 **A.** Again, this provides the detail to the client about how  
7 the glimmer button works. And, so, there were 25 targeted  
8 competitors by name. And during January, every pharmacist  
9 who ordered any of these 25 products could push the glimmer  
10 button and be encouraged to learn about Oxycontin.

11 **Q.** Thank you. And, Dr. Mohr, were you surprised by the  
12 timing of this document?

13 **A.** I was.

14 **Q.** Why?

15 **A.** Paper click advertising really didn't come in until the  
16 advent of the internet, you know, around 2000, 2001, 2002.  
17 And this was in 1995. And I thought these people were  
18 already inventing what we were going to be relying on in the  
19 future known as paper click advertising where you can  
20 specify a competitor's name and your ad will appear on the  
21 web browser.

22 **Q.** Dr. Mohr, let's put the documents aside for a minute.  
23 How do companies build a marketing strategy?

24 **A.** A marketing strategy is a strategic process that  
25 companies undertake. Much like building any sort of a

1 business strategy, this is one component of a business  
2 strategy. And most companies use a sequence of steps in  
3 that process.

4 The first step most companies use -- and this is what  
5 we teach and it's kind of classic in all the marketing  
6 books -- is you start with what's known as a situation  
7 analysis where there is a very thoughtful and thorough scan  
8 of what's happening in the competitive landscape to  
9 understand the opportunities and threats and trends that are  
10 happening broadly in society and in the economy. That's a  
11 very important aspect because staying current with trends is  
12 a key part of successful marketing.

13 The next process is to really do research to understand  
14 customer buying motivations, customer barriers to purchase,  
15 customer triggers.

16 The next step, then, is to do a segmentation analysis.  
17 Not all customers are created equal is the way we teach it  
18 in marketing, and some customers are more important than  
19 others based on their volume of purchase or based on their  
20 propensity to purchase. That's known as segmentation.

21 After we segment the markets, then each category of  
22 customers would receive a unique messaging strategy. For  
23 example, if you're parents when you buy a car, you have  
24 different purchase needs than if you're a young, single male  
25 who's buying a car.

1           This is known as value proposition design. And every  
2           segment gets a different value proposition to address their  
3           buying triggers.

4           There are a couple more steps in the process and I  
5           don't want to bore anybody. I live and die by this and I  
6           find it fascinating.

7           So then the company, based on that solid research,  
8           actually builds the marketing components. And those are  
9           known as the four Ps. And I'm not going to talk about the  
10          four Ps now because I'm sure that is too much detail.

11          And the final step in any marketing strategy is  
12          measuring the effectiveness of the marketing strategy. We  
13          sometimes call this return on investment. So if you spend a  
14          certain amount of money on marketing, you do expect to earn  
15          a return on that, as you would any business investment. So  
16          all companies measure the sales lift attributable to their  
17          marketing strategy.

18       **Q.**    So let's walk through each of those six steps.

19       **A.**    Let's do.

20       **Q.**    The first step that you mentioned, Dr. Mohr, was  
21          situational analysis; is that correct?

22       **A.**    Yes.

23       **Q.**    And do you have an opinion as to whether any of the  
24          distributor defendants or companies affiliated with them  
25          engaged in situational analysis in connection with the

1 description of opioid -- or distribution of opioid  
2 medications?

3 **A.** Yes.

4 **Q.** Okay. And which companies did you determine  
5 participated in situational analysis?

6 **A.** Based on my recollection of my report, I clearly  
7 remember McKesson and Xcenda.

8 **Q.** Let's go with the next document, 42508.

9 MR. ACKERMAN: May I approach, Your Honor?

10 THE COURT: Yes.

11 BY MR. ACKERMAN:

12 **Q.** Dr. Mohr, is this a document that you relied on to  
13 form your opinion?

14 **A.** Yes, it is.

15 **Q.** And why -- what defendant does this document relate to?

16 **A.** This document is titled "McKesson Patient Relationship  
17 Solutions." It is for Janssen.

18 And what you will see, as I flip through this document,  
19 the second page -- I don't know which numbers I'm supposed  
20 to use, but it actually says "Consumer Marketing." So the  
21 minute I see the word "marketing," I kind of look at it.

22 And then it says "Behavioral Experts" and "Data  
23 Analytics." And those are all components of marketing, so I  
24 felt like I had to dig in a little further.

25 **Q.** I'm sorry. Where are you looking in the document?

1       **A.**    I am -- after the one that says "Introduction," I am  
2       then on the next page right at the bottom.

3       **Q.**    Oh, I see.

4       **A.**    I'm sorry.

5       **Q.**    The bubbles at the bottom?

6       **A.**    Yes. Thank you.

7       **Q.**    Okay. And, Dr. Mohr, was there a particular portion of  
8       this document that led you -- that formed the basis of your  
9       opinion that McKesson engaged in situational analysis?

10      **A.**    Yes. If you turn to the little numbers on the right  
11      that says 6 on the Number 6 page -- I think I'm supposed to  
12      use the numbers on the right.

13      **Q.**    Yes.

14      **A.**    Okay.

15      **Q.**    And what is that page titled?

16      **A.**    It says "Market Update." And, again, not all companies  
17      use the word "Situation Analysis," so somebody that's  
18      experienced in marketing kind of knows what a situation  
19      analysis includes.

20           And what we see on the first set of this whole slide  
21      deck is industry data, as I just mentioned a good situation  
22      analysis does. And this one in particular is comparing how  
23      customers, patients abandoned their prescriptions based on  
24      the co-pay amount on the next page, the market update, the  
25      graph.

1           And what you'll see is that the Nucynta abandonment  
2           data from McKesson is compared to the market abandonment  
3           data for non-McKesson pharmacists.

4           I don't think that was the best explanation. Please  
5           forgive me. But, anyway, it's giving market data. Let me  
6           just leave it at that.

7           **Q.** That's the portion you relied on; right?

8           **A.** Yes, one portion. But then I continued to see how they  
9           used that market data in their recommendations.

10          **Q.** I understand. We may get to that.

11          **A.** Okay.

12          **Q.** Dr. Mohr, you stated that you had concluded that Xcenda  
13          had conducted situational analysis as well; is that correct?

14          **A.** Yes.

15          **Q.** And what was the basis for your opinion that Xcenda was  
16          involved in situational analysis?

17          **A.** Xcenda also provided competitive overviews and industry  
18          trends to various brand manufacturers in order to help them  
19          develop their marketing strategies.

20          **Q.** Let's put this exhibit in a different pile because I  
21          want to come back to it.

22                 Dr. Mohr, -- I'm sorry. Before we move on from  
23          situational analysis, is there a specific example you can  
24          recall of Xcenda providing situational analysis?

25          **A.** No. I would need to reference my report for that. I'm



1       sorry.

2       **Q.**     Okay. And would reviewing your report refresh your  
3       recollection as to any specific examples?

4       **A.**     Yes, it would.

5               MR. ACKERMAN: Your Honor, may I give her the  
6       report? Thank you.

7               MS. MCCLURE: And, Your Honor, I'm sorry. Ms. --  
8       Dr. Mohr can, of course, have the report, but I do object to  
9       the report being handed to the Court. This is a refreshing  
10      recollection, so the report should be taken back from the  
11      deputy clerk. Thank you.

12      BY MR. ACKERMAN:

13      **Q.**     Okay. Dr. Mohr, take a moment to review your  
14      report. Let us know when you have reviewed it and  
15      whether your recollection is refreshed.

16      **A.**     Yes. I just pulled one page out at random because  
17      there's so much in here.

18      **Q.**     Okay. So can you -- let me ask the question again.  
19      Can you recall any specific examples that form the basis of  
20      your opinion that Xcenda was involved in situational  
21      analysis with respect to the marketing of prescription  
22      opioids?

23      **A.**     Yes. Xcenda did quite a bit of work that included  
24      collecting data on payers and analyzing payers. It did  
25      quite a bit of work on looking at patient and physician

1 perceptions of opioids. And all of that would fall in the  
2 situation analysis to leverage that data in order to dial in  
3 a marketing strategy.

4 **Q.** Thank you. Dr. Mohr, let's talk about market research  
5 next. How is market research different from situational  
6 analysis?

7 **A.** Market research is generally very -- generally very  
8 focused on specific types of customers in terms of  
9 understanding what their needs are, whereas a situation  
10 analysis is very broad and might focus on things like the  
11 economy, cultural trends, competitive trends, whereas the  
12 market research is really focused on understanding the  
13 buying motivations and triggers for specific customer  
14 purchase groups.

15 **Q.** And did you form an opinion as to whether any of the  
16 distributor defendants or companies affiliated with them  
17 engaged in market research or manufacturers of opioids?

18 **A.** Yes, I did.

19 **Q.** And which, which ones?

20 **A.** I do recall Xcenda specifically.

21 **Q.** I'm going to hand you -- do you recall whether McKesson  
22 was engaged in market research for manufacturers of  
23 pharmaceutical opioids?

24 **A.** Yes, yes, I do recall.

25 **Q.** Okay. Let's go with the next document, 42911.

1 MR. ACKERMAN: May I approach, Your Honor?

2 THE COURT: Yes.

3 BY MR. ACKERMAN:

4 Q. Dr. Mohr, do you have P-42911 in front of you?

5 A. Yes, I do.

6 Q. And is this a document that you relied on to form your  
7 opinion?

8 A. Yes, I did.

9 Q. And why did you rely -- first of all, what defendant  
10 does this document relate to?

11 A. McKesson.

12 Q. And why did you rely on this document?

13 A. This document is titled "Summary of Qualitative  
14 Research Conducted Among Family Physicians." So -- and it's  
15 prepared by the Pharmaceutical Partners Group of McKesson.

16 So that means that this group was performing the  
17 research for their pharmaceutical partners, meaning the  
18 brands or the manufacturers.

19 Q. What's the date of this document?

20 A. Let's see. October, 2000.

21 Q. And for what -- for what pharmaceutical manufacturer  
22 was this research performed?

23 A. Purdue.

24 Q. Did you determine whether McKesson provided any  
25 recommendations based on their research?

1       **A.**    Yes.

2       **Q.**    And did those recommendations factor into your opinions  
3       in this case?

4       **A.**    Yes.

5       **Q.**    Okay.  Would it be typical for companies engaged in  
6       marketing research to provide opinions based on the market  
7       research they have conducted?

8       **A.**    Absolutely.

9       **Q.**    And what, what recommendation -- what portion of this  
10       document led you to conclude that McKesson had provided  
11       recommendations to Purdue?

12       **A.**    So the third page, so the little numbers on the right,  
13       Page 3, has the Table of Contents.  And Page 4 says that  
14       they have a summary of recommendations on Page 4.

15       **Q.**    And then if you look at Page 5, is that a page that you  
16       also relied on?

17       **A.**    Yes.

18       **Q.**    Okay.  And what is, what is the title of that page?

19       **A.**    "Inclusions and Recommendations."

20       **Q.**    And did you find any recommendations in this document  
21       that were specific to prescription opioids?

22       **A.**    Yes.  The things that stuck out to me were specific  
23       recommendations regarding the messaging that physicians,  
24       family physicians in particular would likely respond to in  
25       terms of increasing their likelihood of prescribing -- in

1 this case, I think it was Oxycontin. Let me double-check  
2 that. Yes, Oxycontin.

3 **Q.** So can you point specifically in P-42911 to the  
4 recommendations that you're referring to that you considered  
5 in connection with your opinion?

6 **A.** Yes. Recommendation Number 5 I recall quite  
7 specifically because it says that the research showed that  
8 family physicians were worried about prescribing non --  
9 narcotics long-term; that they would exacerbate addiction  
10 concerns.

11 And, so, the specific recommendation that McKesson  
12 offered for this was that Purdue should consider sponsoring  
13 pain management conferences or lectures by opinion leaders  
14 to focus physician attention on addiction and tolerance  
15 issues.

16 **Q.** And would you look at Paragraph 9. And is Paragraph 9  
17 a recommendation that you considered in connection with  
18 forming your opinions in this case?

19 **A.** Yes.

20 **Q.** Okay. And why did you, why did you rely on Paragraph  
21 9?

22 **A.** Again, a key part of marketing is connecting the dots  
23 between the research and then the actual marketing strategy  
24 that's implemented.

25 And in this particular case, the research showed that

1 family physicians do distinguish long-acting agents such as  
2 Oxycontin, and they are reserved for patients with acute  
3 pain.

4 And the idea was that the family doctors didn't believe  
5 that Oxycontin suffered -- I'm using the words here in the  
6 report -- from the stigma of other narcotics.

7 And the recommendation, then, was that Oxycontin should  
8 focus on these issues in their marketing material to  
9 increase the use of Oxycontin and position it as a safer  
10 narcotic alternative.

11 **Q.** And those words that you've just used, do they appear  
12 in the document?

13 **A.** Yes, Recommendation Number 9.

14 **Q.** Thank you. Put that document aside. Let's move on to  
15 the next step of building a marketing strategy which you  
16 said is segmentation analysis; is that correct?

17 **A.** Yes.

18 **Q.** And do you have any opinion as to whether any of these  
19 defendants or companies affiliated with them engaged in  
20 segmentation analysis with respect to the marketing of  
21 pharmaceutical opioids?

22 **A.** Yes, I do.

23 **Q.** And which companies?

24 **A.** Xcenda.

25 MR. ACKERMAN: Let's get the next document,

1 please, P-4333.

2 May I approach, Your Honor?

3 THE COURT: Yes.

4 MS. MCCLURE: And while they're handing that out,  
5 Your Honor, I just wanted to make sure that my standing  
6 objection relates not just to a particular document but to  
7 the whole issue. Thank you.

8 THE COURT: Okay.

9 BY MR. ACKERMAN:

10 **Q.** Dr. Mohr, do you have P-43333 in front of you?

11 **A.** Yes, I do.

12 **Q.** And is this a document that you relied on to form your  
13 opinion?

14 **A.** Yes, I did.

15 **Q.** And what defendant does this relate to?

16 **A.** Xcenda.

17 **Q.** And why did you rely on this document?

18 **A.** Because it talks specifically about a segmentation  
19 strategy used to develop a targeted list. And, again, this  
20 is just squarely one of the most important parts of  
21 marketing.

22 MS. MCCLURE: So, Your Honor, I apologize, but Mr.  
23 Ackerman said what defendant does this relate to. Xcenda is  
24 not a defendant in this case.

25 THE COURT: That's well-taken. Go ahead, Mr.

1 Ackerman.

2 MR. ACKERMAN: Yes. So let me clean that up, Your  
3 Honor.

4 BY MR. ACKERMAN:

5 Q. Dr. Mohr, which company was performing the  
6 segmentation analysis you've just described?

7 A. Xcenda. It does say on here -- it calls it  
8 AmerisourceBergen Consulting Services.

9 Q. Thank you. Okay. And for what product was -- did you  
10 conclude the segmentation -- the payer segmentation had been  
11 performing?

12 A. This one is for Fentora.

13 Q. And is Fentora an opioid, to your knowledge?

14 A. Yes.

15 Q. Dr. Mohr, are you familiar with something called the  
16 80/20 rule?

17 A. Yeah, of course.

18 Q. And would you explain to the Court what the 80/20 rule  
19 is?

20 A. Yeah. So when we as marketers segment markets, we  
21 again -- maybe I'm saying live and die too much. We live  
22 and die by the 80/20 rule.

23 And what this means is that 20 percent of a group of  
24 customers accounts for 80 percent of the purchase volume in  
25 that category.



1           And this is heuristic or rule of thumb. We require  
2           industry data to determine who those heavy users are of a  
3           particular product category. And the goal of marketing is  
4           to focus on that group of heavy users because simply by  
5           marketing to them, we can capture 80 percent of the revenue  
6           in the market. So it drives efficiency in marketing.

7           **Q.** And, Dr. Mohr, did you see any evidence -- or in  
8           reviewing P-43333, did you see any evidence of application  
9           of that marketing concept?

10          **A.** Yes, I did. It was quite interesting to me that the  
11          detail in this document says that the segmentation was on  
12          targeted payer plans. So this was focusing on the payers.

13                 And the way that we would look at payer plans from a  
14          segmentation perspective is in terms of the covered lives  
15          under that insurance plan.

16                 And in this particular case, the recommendation was to  
17          focus on the top 38 plans to cover the majority of covered  
18          lives through the insurance policies in the marketing  
19          strategy for Fentora.

20          **Q.** Thank you. Let's turn to value proposition design.  
21          And since it's been a little while since you explained it,  
22          can you just briefly explain what a value proposition design  
23          is?

24          **A.** Uh-huh. Value proposition design is the message  
25          strategy that is used to address the buying trigger of the

1 identified customer.

2 **Q.** And, Dr. Mohr, in the course of your work, did you form  
3 any opinion as to whether any of the defendants or companies  
4 affiliated with them engaged in value proposition design  
5 with respect to the marketing of pharmaceutical opioids?

6 **A.** Yes, I did.

7 **Q.** And which companies?

8 **A.** AmerisourceBergen, Xcenda.

9 **Q.** Let me just make that clear.

10 **A.** I know. I'm confused now. It's like I -- go ahead.

11 **Q.** Was it AmerisourceBergen Drug Company or was it Xcenda?

12 **A.** It was Xcenda.

13 **Q.** Thank you. Let's -- and is that opinion based on  
14 documents that you reviewed?

15 **A.** Yes. All my opinions are based on documents that I  
16 reviewed.

17 MR. ACKERMAN: Let's go to P-43335 please.

18 May I approach, Your Honor?

19 BY MR. ACKERMAN:

20 **Q.** Dr. Mohr, I've handed you a document marked  
21 P-43335. Do you have that in front of you?

22 **A.** Yes, I do.

23 **Q.** Okay. Is this a document that you relied on to form  
24 your opinion?

25 **A.** Yes, I did.

1       **Q.**   And why did you rely on this document?

2       **A.**   Again, if you look at the title, it says that this is  
3       the presentation of the payer value story development  
4       proposal, so payer value story.

5           And what you see is that this is from Xcenda, Tim  
6       Regan, AmerisourceBergen Consulting Services. And what's  
7       interesting in here is they go through the various ideas  
8       that they're developing to craft a value proposition for, if  
9       I recall correctly, it was hydrocodone. Let me just see  
10      here.

11      **Q.**   So if you would turn -- actually, if you look at the  
12      page -- there's a page that says "produced natively." Do  
13      you have that as Page 5?

14      **A.**   Yes, I do.

15      **Q.**   And then there's a following page?

16      **A.**   Yes.

17      **Q.**   And did you rely on that page in determining whether  
18      the services that were described in this document were  
19      related to prescription opioids?

20      **A.**   Yes. So the PowerPoint presentation is for Teva and  
21      it's for a couple drugs, Nuvigil, if I'm saying that  
22      correctly, and AD hydrocodone.

23      **Q.**   Thank you. In your opinion, is this a particularly  
24      sophisticated type of marketing?

25      **A.**   Yes, it is. Many companies just do what we call spray

1 and pray. They just blow an advertising message out and  
2 hope that people will respond to it.

3 But by going through these careful sequence of steps to  
4 do the market analysis and the research and the segmentation  
5 and the value proposition, that optimizes the chance that  
6 when you actually get to the communication, you're going to  
7 have an impact.

8 And, so, this is quite sophisticated, but this is not  
9 the most sophisticated value proposition design that I saw.

10 **Q.** What was the most sophisticated one that you saw?

11 **A.** I had never seen this in my experience as a marketing  
12 professor, so it stood out to me. It's called a  
13 triangulated value proposition. And these are the words in  
14 the document.

15 And it said, "We're simultaneously going to optimize  
16 the payer value story with the physician value story with  
17 the patient value story and hit the sweet spot of the three  
18 of those in our value proposition design." So it was a  
19 triangulated value proposition.

20 **Q.** And which company prepared that triangulated value  
21 proposition?

22 **A.** Xcenda.

23 **Q.** So, now, let's turn to marketing plan.

24 **A.** Okay. Let's do.

25 **Q.** And, Dr. Mohr, I assume that when the rest of us who

1 don't study marketing for a living think of marketing, is  
2 marketing plan generally what we think of?

3 **A.** No. Generally, you think of the things that you love  
4 to hate like annoying commercials or annoying salespeople or  
5 wondering if you're really getting a good deal on a rebate  
6 or if they just raised the price before they gave you the  
7 rebate. So most people think only of that front-facing  
8 marketing.

9 **Q.** So you mentioned the four Ps of a marketing plan. What  
10 are the four Ps of a marketing plan?

11 **A.** Yeah. So, again, marketing is a very systematic  
12 approach to optimizing revenue in the marketplace. And the  
13 four Ps include the products that are being developed and  
14 sold. And even retailers have a product mix that they  
15 select. And, so, even if you're not a manufacturer, you  
16 still have a product strategy.

17 The price that you charge for those goods is critically  
18 important in signaling value and signaling the customers  
19 you're going after.

20 The promotion mix is a separate part of marketing, all  
21 those things you love to hate that I just told you about.

22 And then the fourth P is place. And place means  
23 distribution channel. Place is the place where customers  
24 gain access to the product and service.

25 **Q.** Dr. Mohr, were you able to form an opinion as to

1 whether any of the defendants or companies affiliated with  
2 them were involved in connection with the mix of promotions  
3 for pharmaceutical opioids?

4 **A.** Yes, I did.

5 **Q.** And what is that opinion?

6 **A.** Many of the services they offer did focus on the  
7 promotion mix.

8 **Q.** And is that true for all of the -- AmerisourceBergen,  
9 McKesson, and Cardinal?

10 **A.** Yes, it is.

11 **Q.** So let's first look at the first three documents we  
12 took out today, the overview documents. Do you have those  
13 in front of you?

14 **A.** Let me grab them.

15 **Q.** Sure. And, actually, let's just look at one of them as  
16 an example. Let's look at P-43195 which is the Cardinal  
17 overview.

18 **A.** Thank you.

19 **Q.** And, Dr. Mohr, what is a fee-for-service offering?

20 **A.** Most marketing services are performed on a  
21 fee-for-service basis. And, so, if you're an advertising  
22 agency, you submit a proposal to perform services and the  
23 client pays you for those services rendered.

24 **Q.** And did you form an opinion as to whether any of the  
25 defendants or companies affiliated with them provided

1 fee-for-service marketing to manufacturers of pharmaceutical  
2 opioids?

3 **A.** Yes, I did.

4 **Q.** And which defendants provided fee-for-services?

5 **A.** All three of them.

6 **Q.** Okay. And just looking at this list, or this document  
7 that's in front of you, 43195, does this -- did you rely on  
8 this document in connection with concluding whether Cardinal  
9 offered fee-for-service programs?

10 **A.** Yes, I did.

11 **Q.** And where in this document or how -- why did you rely  
12 on this document?

13 **A.** What you'll see is that the services that Cardinal is  
14 offering to the pharmaceutical manufacturers lists the price  
15 for each service.

16 So, for example, if you wanted, as a pharmaceutical  
17 manufacturer, to subscribe to the First Script service, you  
18 would pay \$15,000 for that service. That includes notifying  
19 the pharmacy chain of the deal information. And these would  
20 include service flashes and facets.

21 And, so, all of these were communication tools that the  
22 manufacturer could purchase from Cardinal Health. There are  
23 a number of other services listed as well. If you'll allow  
24 me to go on, one thing that's --

25 **Q.** Let's keep going because I want to make sure that -- I

1 know you've got time constraints and we want to make sure --

2 **A.** Thank you.

3 **Q.** You're welcome.

4 MR. ACKERMAN: Let's get the next document.

5 BY MR. ACKERMAN:

6 **Q.** Dr. Mohr, did you, in the course of forming your  
7 opinion, conclude whether any of the defendants offered  
8 savings cards with respect to pharmaceutical opioids?

9 **A.** Yes, I did.

10 **Q.** And are savings cards a form of promotion?

11 **A.** Yes. Anything that's designed to give a financial  
12 incentive to a consumer is considered a sales promotion.  
13 And that falls into the promotion mix.

14 **Q.** And what is a savings card?

15 **A.** In this particular case, a savings card was designed to  
16 help pay for the co-pay on the prescription. But we know  
17 things like coupons and rebates would be the equivalent of  
18 what we see in consumer marketing.

19 MR. ACKERMAN: May I approach, Your Honor?

20 THE COURT: Yes.

21 BY MR. ACKERMAN:

22 **Q.** Dr. Mohr, I'm handing you what is P-43331. Dr.  
23 Mohr, is this a document that you relied on to form your  
24 opinion?

25 **A.** Yes, it is.



1 Q. And what defendant does this document relate to?

2 A. Cardinal Health.

3 Q. And why did you rely on this document?

4 A. Because this document lists a savings card. I just  
5 want to refresh my mind for a minute on this one.

6 Q. If you look about halfway down the page, Dr. Mohr.

7 A. Yes. This was a Butrans email. And it says "Butrans  
8 savings card." Thank you. It took me a while to see it  
9 because often times I see the visual image of the actual  
10 savings card in my brain that I've seen before. So --

11 Q. And to your understanding, is Butrans an opioid?

12 A. Yes, it is.

13 Q. And which company manufactured Butrans?

14 A. Purdue.

15 Q. Dr. Mohr, if we can put that document aside.

16 Did you form an opinion as to whether any of the  
17 defendants or companies affiliated with them provided  
18 marketing services in connection with product launches of  
19 opioid products?

20 A. Yes, I did.

21 Q. Okay.

22 MR. ACKERMAN: Let's get the next document, 42605.

23 May I approach, Your Honor?

24 THE COURT: Yes.

25 BY MR. ACKERMAN:

1 Q. Dr. Mohr, I've handed you what's P-42605. Is this  
2 a document that you relied on to form your opinions?

3 A. Yes, it is.

4 Q. And, Dr. Mohr, what defendant does this document relate  
5 to?

6 A. McKesson.

7 Q. And why did you rely on this document?

8 A. This is a communication that went out from McKesson to  
9 its Retail Weekly Wire which is a type of email subscription  
10 that the pharmacist would subscribe to, and it essentially  
11 gives the highlights of the week. This is dated  
12 January 13th, 2011. So communication with customers of  
13 marketing.

14 Q. And if you would turn to Page 3, Dr. Mohr.

15 A. Yes.

16 Q. And specifically beginning about halfway -- or about  
17 halfway down on the page, did you rely on any portion of  
18 Page 3 in connection with your opinion?

19 A. Yes, I did.

20 Q. And can you explain to the Court which portion of this  
21 page you relied on?

22 A. Yes. This is a service that McKesson offers called Rx  
23 Focus Launch. And it's actually an auto ship program where  
24 auto ship means that for a targeted pharmacist, McKesson  
25 would actually auto ship newly launched drugs into the

1 marketplace.

2 **Q.** And does -- did this document give any indication of to  
3 whom McKesson would be auto shipping drugs?

4 **A.** Yes. The first bullet says that 3,000 customers -- in  
5 this case, it would be pharmacies -- have been identified  
6 for this auto ship because they are high dispensers of  
7 similar medication.

8 **Q.** And, Dr. Mohr, would this be -- seem to you to be an  
9 application of the 80/20 rule?

10 **A.** Yes.

11 **Q.** Put that document aside, Dr. Mohr. Let's go back to  
12 the one I said put in a separate pile, 42508, if you would,  
13 please.

14 **A.** Yes, just one minute. My piles are getting a little  
15 confused. Just bear with me.

16 **Q.** You got nothing on the Judge. He's got piles on top of  
17 his piles.

18 **A.** His desk looks like my office. Okay, I found it.

19 **Q.** All right, great. You have 42508 if front of you?

20 **A.** Yes, I do.

21 **Q.** And to refresh everybody, this is the McKesson document  
22 entitled "Nucynta & Nucynta ER 2012 Data Review." Is that  
23 right?

24 **A.** Yes.

25 **Q.** And to your understanding, is Nucynta an opioid

1 medication?

2 **A.** Yes, it is.

3 **Q.** And is it a prescription opioid medication?

4 **A.** Yes.

5 **Q.** Okay. On the cover of this page does it indicate --  
6 does it indicate whether McKesson provided savings cards for  
7 Nucynta?

8 **A.** Yes. In fact, there is an image of this on the cover  
9 that is prepared by McKesson, a Nucynta savings card.

10 **Q.** And if you would turn to slide 11, please.

11 **A.** Slide 11?

12 **Q.** Yes.

13 **A.** Yes. That's -- got it.

14 **Q.** And is this a slide that you relied on in connection  
15 with your opinion?

16 **A.** Yes. This one essentially says that there's going to  
17 be a \$25 savings program, which means when the patient  
18 presents the card, they just pay \$25 for the co-pay.

19 **Q.** And, Dr. Mohr, did this slide describe other  
20 promotional programs for Nucynta?

21 **A.** Yes. We see additional detail here. The slide deck  
22 provided also details regarding other types of programs,  
23 including pharmacy intervention coaching.

24 **Q.** Before we get to that, Dr. Mohr, --

25 **A.** Yes.

1 Q. -- would you turn to Page 31, please.

2 A. Yes. This is another program update, another form of  
3 sales promotion.

4 Q. Okay. Hold on. Let me ask the question first before  
5 you answer.

6 Is -- beginning at Page 31 and a few pages following  
7 through, say, about Page 39, are these pages that you relied  
8 on in connection with forming your opinions in this case?

9 A. Yes.

10 Q. And why did you rely on these pages?

11 A. Because they talk about a sampling program. And  
12 sampling is a critical part of that promotion bucket to  
13 encourage consumers to try the product. And in this case,  
14 it says "Nucynta 10 Free Pills Program."

15 Q. Did you say 10 free pills?

16 A. This one is 10 free pills. I did see others for three  
17 free pills.

18 Q. Okay. And to be clear, that phrase "10 free pills"  
19 appears on Page 31; correct?

20 A. Yes, consistently through the next pages because we see  
21 a program overview that compares the sales lift attributed  
22 to the sampling program.

23 Q. And is that -- are you describing what is reported on  
24 slide 34?

25 A. Yes, I am.

1 Q. Thank you.

2 A. What we see is that sampling is one of the most  
3 effective marketing tools. And in this case, it increased  
4 average monthly claims on Nucynta of 198 percent from the  
5 prior year.

6 Q. So, Dr. Mohr, I want to take a break from documents for  
7 a moment and I want to clarify one thing.

8 Are you today offering any opinions concerning the  
9 effectiveness of the opioid marketing that you observed?

10 A. No.

11 Q. And was that part of your assignment for this case?

12 A. No.

13 Q. Have you conducted any kind of statistical analysis to  
14 determine the effect of distributors' marketing on sales?

15 A. No.

16 Q. Have you conducted any kind of statistical analysis to  
17 determine whether the distributors' marketing increased  
18 demand for opioids?

19 A. No.

20 Q. And have you conducted -- and you didn't conduct any of  
21 that analysis because that wasn't your job; right?

22 A. Correct.

23 Q. What were you asked to do in connection with forming  
24 opinions for this litigation?

25 A. I was asked to determine whether or not the

1 distributors engaged in marketing of opioids.

2 MR. ACKERMAN: Let's go to the next document,  
3 43234.

4 May I approach, Your Honor? We're almost done.

5 BY MR. ACKERMAN:

6 Q. Dr. Mohr, do you have document 43234 in front of  
7 you?

8 A. Yes, I do.

9 Q. And is this a document that you relied on to form your  
10 opinions?

11 A. Yes, I did.

12 Q. And what defendant does this document relate to?

13 A. The defendant in this particular case is ABC.

14 Q. And why did you rely on this document?

15 A. Because this is a summary of a sales promotion offer  
16 that ABC is receiving for fentanyl.

17 Q. Okay. And was there any indication -- and, so, if this  
18 was a summary of a sales promotion offer, what role did it  
19 play in forming your opinion?

20 A. In this particular case, it's very important that the  
21 distribution channel members, distributors' efforts are  
22 tightly aligned with the brand manufacturers' efforts.

23 And in this particular case, to align those efforts,  
24 fentanyl, Mallinckrodt was offering ABC a 15 percent payout  
25 for the sales of fentanyl that shipped out of their -- that

1 they received as orders.

2 And what struck me was the volume of money involved.  
3 In this particular case for a particular time period, ABC  
4 was already eligible for \$10.6 million in the payout. And  
5 the email is encouraging them to put fentanyl in a primary  
6 position on their ordering platform so that they could  
7 actually get a 20 percent payout rate, in which case they  
8 would receive \$20 million.

9 **Q.** Thank you. Dr. Mohr, let's put that document aside.  
10 Did you form any opinion as to whether conducting outreach  
11 to pharmacies concerning pharmaceutical opioids is a form of  
12 marketing?

13 **A.** Yes.

14 **Q.** And what is that opinion?

15 **A.** Yes, that distributors engaged in outreach to  
16 pharmacies.

17 **Q.** Let's go back again to the McKesson Nucynta document,  
18 42508. Do you have that?

19 **A.** Yes, I do.

20 **Q.** Okay. And was there a particular part of this document  
21 that you relied on in connection with forming that opinion?

22 **A.** Yes. I had mentioned the important role of marketing  
23 strategy previously. And on Page 44, this particular  
24 document goes into more strategic aspects of how to  
25 encourage customers to use the product.



1 Q. And, in fact, if you turn to Page 47 --

2 A. Yes.

3 Q. -- did you refer, or did you rely on this slide in  
4 connection with your opinion?

5 A. Yes. So Page 47 talks about how we use those key  
6 patient contact points again where the contact is a touch  
7 point. And we talk about the role of the physician -- not  
8 "we." In this particular case, McKesson talks about the  
9 role of the physician, the pharmacy, and the patient in  
10 optimizing engagement is the words that they use here which,  
11 again, is marketing jargon.

12 MR. ACKERMAN: May I approach, Your Honor?

13 THE COURT: Yes.

14 BY MR. ACKERMAN:

15 Q. Dr. Mohr, I've handed you what's marked as P-43300.  
16 Do you have that document in front of you?

17 A. Yes.

18 Q. And is this a document that you relied on to form your  
19 opinions in this case?

20 A. Yes.

21 Q. And what defendant does this document relate to?

22 A. Bergen Brunswick.

23 Q. And, again, that's the predecessor of ABDC; correct?

24 A. Yes.

25 Q. And why did you rely on this document?

1     **A.**     This document shows that Bergen would be able to do a  
2     mailing to -- it's called an educational mailing. And an  
3     educational mailing is for the -- excuse me. It's by  
4     PlusCare which is the managed care division of Bergen  
5     Brunswick is what it says.

6             And they were going to increase the education of pain  
7     management to 1,800 community pharmacists with a mailing  
8     that included six particular types of informational content.  
9     And, again, educate and inform means generally awareness,  
10    and it's one of the key roles and key objectives of  
11    marketing.

12    **Q.**     And was this -- you, you talked about two marketing  
13    concepts today; the 80/20 rule and you've talked about  
14    making sure that strategies are aligned; right?

15    **A.**     Uh-huh.

16    **Q.**     Did you, in forming your opinions, see any evidence of  
17    those two concepts in this document?

18    **A.**     Yes. In this particular case, they were focusing on  
19    high prescribers of opioids and territories, and making sure  
20    that those high prescribers were aware that the Bergen  
21    Brunswick pharmacy affiliates, Good Neighbor Pharmacies, or  
22    their captive pharmacies, have Oxycontin available.

23    **Q.**     And the words "high prescribers," are those your words  
24    or are those the words that appear in the document?

25    **A.**     Those are the words in the document.

1       **Q.**   And when you said have Oxycontin available, are those  
2       your words or are those the words that appear in the  
3       document?

4       **A.**   They're in the document.

5       **Q.**   Thank you. Let's put documents aside for a minute. I  
6       want to ask you about a couple more marketing concepts and  
7       then we'll wrap up.

8             What is a patient adherence program?

9       **A.**   A patient adherence program from a marketing lens is  
10      something that's designed to make sure that people utilize  
11      the product once they purchase it.

12      **Q.**   And did you form any opinion as to whether any of the  
13      distributors or their affiliates were engaged in patient  
14      adherence programs in connection with -- related to  
15      prescription opioids?

16      **A.**   Yes.

17      **Q.**   Which defendants?

18      **A.**   My recollection is that they all did.

19      **Q.**   What about sales force training? What is sales force  
20      training?

21      **A.**   As I mentioned earlier, one of the things that's really  
22      central to marketing is the role of selling in the promotion  
23      mix. And certainly in this industry, the role of selling is  
24      critically important.

25      **Q.**   And, Dr. Mohr, did you form any opinion as to whether

1 any of the distributors or their affiliates were involved in  
2 sales force training?

3 **A.** Yes.

4 **Q.** And which ones?

5 **A.** It was the unit of ABC Xcenda.

6 **Q.** Okay. What's thought leadership?

7 **A.** Thought leadership refers to gaining credibility and  
8 trust through authoring articles that portray an image of  
9 expertise.

10 **Q.** Outside of the pharmaceutical industry, just in the  
11 world at large, can you give us some examples of thought  
12 leadership?

13 **A.** Yes, I can. One of the most important things that's  
14 been happening right now during COVID when customers  
15 can't -- haven't been able to go to stores to buy products,  
16 we see companies like Nike building out a platform on apps  
17 for motivating people to exercise and giving them nutrition  
18 tips. These are completely independent of marketing any  
19 Nike product whatsoever.

20 **Q.** Did you form an opinion as to whether any of the  
21 distributors or their affiliates were engaged in thought  
22 leadership with respect to prescription opioids?

23 **A.** Yes.

24 **Q.** And which ones?

25 **A.** All three did various versions of thought leadership.

1       **Q.**   And can you, sitting here, recall any examples of  
2       thought leadership that formed the basis of your opinion?

3       **A.**   Yes.  So thought leadership often times includes  
4       providing education and training.  And all three  
5       distributors offered trade shows at which various target  
6       customers could attend to be educated on new drugs and new  
7       trends.

8       **Q.**   And did any -- what about continuing medical education  
9       classes?  Did that factor into your opinion?

10      **A.**   Yes.  The -- I'm trying to recall which distributors  
11      specifically offered continuing medical education.  I would  
12      have to look at my report for that.  But at least two of the  
13      three I recall did offer continuing medical programs.

14      **Q.**   Let's just make sure so the record's clear.  Can you  
15      look at your report and then -- would looking at the report  
16      refresh your recollection?

17      **A.**   Yes.

18      **Q.**   Okay.  So can you look at the report and let us know  
19      which defendants, in your opinion, provided continuing  
20      medical education classes concerning prescription opioids?

21      **A.**   ABC Specialty Group, Xcenda, ABC's Imidex unit, and  
22      McKesson and Cardinal Health are all listed in that section  
23      of my report.

24      **Q.**   Thank you.  And, again, your conclusions were based on?

25      **A.**   Evidence that I reviewed, documents that I reviewed.

1       **Q.** Did you form an opinion as to whether any of the  
2       distributors or companies affiliated with them authored  
3       articles in medical journals concerning opioids?

4       **A.** Yes.

5       **Q.** And which, if any, of the distributors or their  
6       affiliates were involved in authoring articles?

7       **A.** It was the ABC affiliate Xcenda.

8       **Q.** Okay. And, again, what was the basis for that opinion?

9       **A.** Extensive documentation regarding their role.

10      **Q.** What is a key opinion leader?

11      **A.** In marketing, an opinion leader is somebody who's  
12      relied on as a trusted expert. And, as a result, they're  
13      viewed as highly credible.

14      **Q.** And, Dr. Mohr, did you form an opinion as to whether  
15      any of the distributors or their affiliates were involved in  
16      identifying or coordinating with key opinion leaders with  
17      respect to prescription opioids?

18      **A.** Yes.

19      **Q.** And outside of the pharmaceutical industry, can you  
20      provide an example of the use of key opinion leaders?

21      **A.** Yes. It's quite common that companies hire opinion  
22      leaders to help engage their audience. This is really  
23      popular right now in the beauty and fashion industry where  
24      we see social media influencers being used quite heavily by  
25      makeup brands.

1           In addition, in the outdoor industry it's quite common  
2           to have brand ambassadors who essentially if they're out  
3           training or engaging in outdoor activities will use social  
4           media to give us a shout-out for why they're using a  
5           particular brand. And it gives more credibility because  
6           it's considered to be authentic and unbiased.

7           **Q.** And I don't remember whether I asked this question.  
8           Let me ask it again. Did you form an opinion as to when --  
9           whether any of the distributor defendants or companies  
10          affiliated with them were involved in identifying or  
11          coordinating with key opinion leaders?

12          **A.** Yes.

13          **Q.** And which, if any, of the companies or their  
14          affiliates?

15          **A.** I'm sorry, my memory is running a little thin right  
16          now. I would need to refresh my memory so I'm 100 percent  
17          accurate.

18          **Q.** Okay. Would it refresh your recollection to look at  
19          your expert report?

20          **A.** Yes.

21                   MR. ACKERMAN: Your Honor, may she look at her  
22          expert report?

23                   THE COURT: Yes.

24                   THE WITNESS: My report references ABDC.

25          BY MR. ACKERMAN:

1 Q. Is it ABDC or one of their affiliates?

2 A. My report says ABDC.

3 Q. Okay.

4 MR. ACKERMAN: I'm mindful of the time, Your  
5 Honor. I am almost done, but I don't know whether we want  
6 to --

7 THE COURT: Well, I'll let you finish your direct  
8 if you can do it in five minutes.

9 MR. ACKERMAN: It might take eight, but I'll do my  
10 best.

11 THE COURT: Well, we better take a break then.  
12 We'll be in recess for ten minutes.

13 You can step down during the break, Dr. Mohr.

14 THE WITNESS: Thank you.

15 (Recess taken at 10:29 a.m.)

16 THE COURT: Dr. Mohr, if you'll resume the witness  
17 stand, please.

18 All right. Mr. Ackerman.

19 BY MR. ACKERMAN:

20 Q. All right. Dr. Mohr, let's continue to talk about  
21 public relations. Is public relations a form of marketing?

22 A. Yes. Public relations falls in that promotion bucket  
23 along with the other tools we've talked about.

24 Q. And let's just define it so everybody knows what we're  
25 talking about. What do you mean when you refer to public



1 relations?

2 **A.** Public relations is the part of marketing that's  
3 designed to create favorable impressions among a broad  
4 variety of stakeholders including media, society,  
5 government, et cetera.

6 **Q.** And putting aside pharmaceutical industry, just talking  
7 about the industry at large --

8 **A.** Uh-huh.

9 **Q.** Are you generally aware whether companies conduct  
10 public relations through trade organizations?

11 **A.** Yes. Trade organizations are a very important part of  
12 public relations because oftentimes an industry will share  
13 common issues and by having a collective approach in  
14 addressing those issues, the whole industry benefits.

15 **Q.** Can you provide an example?

16 **A.** Yes. For example, it's fairly common in the, again,  
17 outdoor industry. If companies are concerned that  
18 engagement of society generally is going down, then they  
19 might form an industry association that markets collectively  
20 the goal and benefits of getting families outside.

21 So, there are two groups that I'm thinking of in  
22 particular. One is called Go Boating and the other is  
23 called Go RVing. And they are industry associations  
24 designed to get more people going outdoors because, guess  
25 what? When they go outdoors, they need to buy gear.

1 Q. Dr. Mohr, first of all, are you aware as to whether the  
2 defendants here were members of a trade organization?

3 A. Yes, they were.

4 Q. And what was that trade organization?

5 A. The current name of it is the HDA, the Healthcare  
6 Distribution Alliance.

7 Q. And, Dr. Mohr, did you form an opinion in connection  
8 with this case as to whether the defendants conducted public  
9 relations related to prescription opioids through their  
10 Trade Association, the HDA?

11 A. Yes.

12 Q. And what was the basis for your opinion?

13 A. I reviewed internal documents that were from all three  
14 companies regarding the expectations they had for the HDA to  
15 act on their behalf.

16 Q. Thank you. We're getting close to the end now, Dr.  
17 Mohr. We've looked at, I'd say, roughly 15 documents today.  
18 Do those documents represent the sum total of your reliance  
19 materials?

20 A. No.

21 Q. Do you have any estimate of how many documents you  
22 relied on in forming your opinion?

23 A. I relied on hundreds of documents, tens of thousands of  
24 pages.

25 Q. If we went through every document while you were on the

1 witness stand, how long would that take?

2 **A.** I love data science and so, I did some math and, in  
3 this particular case, my estimate with tens of thousands of  
4 pages, if we spent about six minutes per document, we would  
5 probably be here a week to go through all the documentation.

6 **Q.** And so, Dr. Mohr, are the documents that we looked at  
7 today representative of other internal documents that are  
8 referenced in your report as the basis for your findings.

9 MR. HESTER: Object as vague, Your Honor.

10 THE COURT: Overruled. She can answer.

11 BY MR. ACKERMAN:

12 **Q.** Let me ask the question again, Dr. Mohr. Are the  
13 documents that we looked at today representative of the  
14 other internal documents that you relied on as the basis for  
15 your findings?

16 **A.** Yes. And if I may, I just think that they are very  
17 average collection in the sense that I saw some that were,  
18 you know, less and more sophisticated than this. So, this  
19 -- I tried to pick, you know, kind of a representative set.

20 **Q.** Thank you. Dr. Mohr, to summarize, is it your opinion  
21 -- or it is your opinion that distributors or companies  
22 affiliated with them were engaged in the marketing of  
23 opioids, correct?

24 **A.** Yes.

25 **Q.** And in forming that opinion did you rely on documents

1 showing sophisticated marketing?

2 **A.** Yes. This was some of the most sophisticated marketing  
3 that I've seen.

4 **Q.** And in forming your opinion did you rely on documents  
5 showing distributor involvement at multiple levels of the  
6 marketing process?

7 **A.** Yes, I did.

8 **Q.** Now, just to be clear, distributors don't manufacture  
9 the opioids, correct?

10 **A.** Correct.

11 **Q.** But in forming your opinion, did you draw any  
12 conclusions as to why the distributors would participate in  
13 the marketing of prescription opioids?

14 MR. HESTER: Object as calling for speculation.

15 THE COURT: Wait a minute.

16 MS. WICHT: And join the objection, Your Honor.  
17 That's okay. Go ahead.

18 MS. MCCLURE: Join and contrary to the corporate  
19 conduct ruling that Your Honor has previously made regarding  
20 motives and corporate conduct with respect to experts in  
21 general.

22 THE COURT: Well, I will sustain that, the  
23 objection to that one, Mr. Ackerman. That gets into the  
24 realm of speculation and I will sustain the objection.

25 MR. ACKERMAN: I did ask, Your Honor, whether she

1 had formed -- okay. Let me ask the question again.

2 BY MR. ACKERMAN:

3 **Q.** Did you come -- did you, Dr. Mohr, form any opinions as  
4 to why the distributors participated -- as to whether the  
5 distributors reaped any benefit from participation in the  
6 marketing of opioids?

7 MR. HESTER: Same objection, Your Honor.

8 MS. MCCLURE: Join.

9 THE COURT: I'll overrule that one. You can  
10 answer that one, if you can, Dr. Mohr.

11 THE WITNESS: Could you read the question back,  
12 please?

13 BY MR. ACKERMAN:

14 **Q.** Sure. Did you, Dr. Mohr, form any opinions as to  
15 whether the distributors reaped any benefit from their  
16 participation in the marketing of prescription opioids?

17 **A.** The evidence that I reviewed, the documents suggested  
18 that the distributors benefited financially from the  
19 incremental lift due to their marketing programs.

20 MS. MCCLURE: Your Honor, I move to strike that  
21 testimony as contrary to Dr. Mohr's prior opinion that she  
22 had no opinion whether distributors' alleged marketing had  
23 any impact on sales or had -- and had no marketing causation  
24 opinion. That response directly contradicted her prior  
25 opinion and the assurances the plaintiffs have offered

1 regarding this witness.

2 MR. ACKERMAN: So, Your Honor, first of all, I  
3 think they can explore that on cross. I don't think there's  
4 any contradiction at all. She did testify that she viewed  
5 representations in documents concerning the effective  
6 marketing programs. She's not offering any causation  
7 opinion.

8 THE COURT: I will -- I'll deny the motion. I  
9 think you're correct. It can be explored on cross.

10 MR. ACKERMAN: Thank you. Can I have a moment,  
11 Your Honor?

12 (Pause)

13 MR. ACKERMAN: I have no further questions, Your  
14 Honor. We'll pass the witness.

15 THE COURT: All right. Thank you, Mr. Ackerman.  
16 You go first?

17 MS. MCCLURE: I do, Your Honor. However, we have  
18 a matter we would like to discuss with the Court and think  
19 it would be appropriate at this time to request that the  
20 Court excuse Dr. Mohr for the period of time addressing that  
21 matter.

22 THE COURT: All right. This is things that happen  
23 in trials, Ms. -- Dr. Mohr, so if you could just wait in the  
24 witness room across the hallway, we'll call you back in a  
25 minute.

1 (Pause)

2 THE COURT: All right. Ms. McClure.

3 MS. MCCLURE: Thank you, Your Honor. At this  
4 time, I will say that my -- I expect my colleagues to chime  
5 in after I address the Court, but we do move to strike the  
6 entire testimony of Dr. Mohr. What we have just heard is  
7 that the distributors engaged in marketing. That is the sum  
8 total of Dr. Mohr's opinion.

9 Marketing is not a tort. If it were, Dr. Mohr wouldn't  
10 have a job. Companies in America would not be able to  
11 continue to operate.

12 Dr. Mohr has clearly stated that she offers no opinion  
13 that any of this marketing impacted sales for prescription  
14 opioids at all. She has no marketing causation opinion.  
15 She has not attempted to link any conduct between the  
16 distributors' marketing and sales anywhere, let alone in  
17 Huntington-Cabell.

18 Moreover, Dr. Mohr in her deposition clearly testified  
19 that none of the marketing materials she viewed did she  
20 evaluate them for whether they were false or misleading.  
21 She testified she has no opinion that any of the materials  
22 she reviewed was a lie.

23 Now, the -- so what we are left with here is basically  
24 so what? Helpfulness to the trier of fact is the touchstone  
25 of Rule 702, as Your Honor well knows from the *Koger v.*

1        *Norfolk Southern Railway* opinion.

2            The existence of marketing proves nothing. Plaintiffs'  
3        marketing theory as articulated in their complaint is that  
4        the manufacturers' deceptive marketing caused harm in these  
5        jurisdictions, that they falsely convinced prescribers of  
6        the safety of opioids. That's at the third amended  
7        complaint, Paragraph 374.

8            Merely showing that distributors marketed without tying  
9        any of that to an increase in sales or to any false or  
10       misleading conduct does nothing. It is not enough. It is  
11       not helpful.

12           To be clear, Your Honor, there are no other witnesses  
13        that the plaintiffs will be offering on anything having to  
14        do with marketing. Drs. Lembke, Kolodny and Keyes have  
15        already been prevented by Your Honor's order to testify  
16        regarding marketing causation. So, those marketing  
17        causation experts are out.

18           Dr. Mohr has simply testified if distributors say they  
19        didn't market, that's not true. They did. That has no  
20        connection to the issues that are before Your Honor.

21           And so, the opinions here have no relevance to the  
22        issues in this case. Your Honor will have no reason to  
23        return to any of these opinions in evaluating any of the  
24        evidence as a fact-finder.

25           Rule 702 applies in bench trials. That's the *UGI*



1     *Sunbury* case, *Kumho Tire*, as well, the decision from Justice  
2     Scalia. There's simply no fit to *Huntington-Cabell*. There  
3     is no relevance to this testimony and we request that it be  
4     stricken.

5             Of course, we are prepared to cross Dr. Mohr, if need  
6     be, but in a case where we have timing concerns, to us,  
7     we've spent two hours-plus on an expert related to proving  
8     that defendants, if Your Honor were to accept the testimony,  
9     marketed, which simply is irrelevant.

10            THE COURT: Ms. Wicht? Mr. Hester?

11            MS. WICHT: Your Honor, certainly, we join  
12     everything that Ms. McClure said. What I would add to that,  
13     Your Honor, is that I believe that although it was  
14     potentially disguised in the manner of the questioning, I  
15     think that what we have just seen is a paradigmatic example  
16     of what the Court excluded, which is an expert simply coming  
17     in reciting what is in documents; in this case, documents  
18     that are not admitted into evidence and never will be  
19     admitted to evidence. She's simply come in and sort of  
20     recited her review of the documents and what she saw.

21            The fact that she then -- the only thing she adds to  
22     that is that she says this is what the document said and  
23     it's my opinion that that is marketing. I would  
24     respectfully submit that that is not an opinion; that, in  
25     addition to all the grounds that Ms. McClure said, is not an

1 opinion that is helpful or meaningful to the Court. And we  
2 would also request that she be excluded on the basis that  
3 she simply provided prohibited factual narrative.

4 THE COURT: Mr. Hester?

5 MR. HESTER: Your Honor, my colleagues have stated  
6 it well. I would just add that it's really a truism that  
7 companies in this country and the global economy market  
8 services and that's all that Dr. Mohr has testified to. Her  
9 opinion really is nothing more than the opinion that the  
10 companies are engaged in marketing.

11 She specifically disavowed any opinion on any effect on  
12 sales of prescription opioids. She specifically disavowed  
13 any analysis as to whether the marketing activities  
14 increased demand. So, we're left merely with a truism and  
15 we submit it's not relevant to the Court. It's not relevant  
16 to any disputed issue in this case that companies engage in  
17 marketing full stop.

18 And so, I wanted to underscore, we are under time  
19 pressure here. It will take us a little while to sift  
20 through what she said because, as Ms. Wicht points out,  
21 she's gone through a number of documents. It's going to  
22 require us to work through those documents and to undermine  
23 them through cross examination. We're prepared to do that,  
24 but we submit it's not sensible as an allocation of the  
25 Court's time to proceed any further with this subject

1 matter.

2 THE COURT: Mr. Ackerman, do you want to respond  
3 to that?

4 MR. ACKERMAN: Yes, Your Honor. A couple of  
5 things, Your Honor. Number one, you've already denied that  
6 motion with respect to this witness, so I think this is just  
7 reiterating arguments that you have already rejected.

8 Number two, the defendants are the ones who seek to  
9 blame manufacturers in this case. They have a witness list  
10 that includes 130 people. Nearly all of them are may-call  
11 witnesses. And it includes representatives from each of the  
12 opioid manufacturers that they intend to put on by  
13 designation.

14 In the opening, Your Honor, and this is -- I don't know  
15 who had this because it was just e-mailed to me because this  
16 was not raised with us in advance, but one of the defendants  
17 said here's what the evidence will show if the issue of  
18 marketing becomes one we have to focus on at trial. The  
19 issue -- the evidence will show that our primary customers,  
20 our pharmacies, have platforms that allow manufacturers to  
21 pass along the information.

22 Their -- the opening statements focused on opioid  
23 manufacturers. Defendants' case is likely to focus on  
24 opioid manufacturers.

25 We have a witness who has put forth an opinion as to

1 what the distributors did. They are free to cross her on  
2 that opinion. If -- the Court has already decided that this  
3 evidence is helpful and I don't think the defendants have  
4 raised anything new here, Your Honor, that hasn't been  
5 raised before.

6 THE COURT: Well, as I understand it, the  
7 principal theory of the plaintiffs' case is that the  
8 manufacturers created demand and flooded the market with  
9 product and we have a little bit of evidence here that these  
10 defendants participated in that. I think it goes to the  
11 weight rather than the admissibility and I'm not going to  
12 strike her testimony. We'll see what happens on cross  
13 examination.

14 MR. ACKERMAN: Thank you, Your Honor.

15 THE COURT: That will determine what weight, if  
16 any, I give to her testimony.

17 MR. ACKERMAN: Thank you, Your Honor.

18 THE COURT: Do you want to bring her back in?

19 (Pause)

20 THE COURT: You may cross examine, Ms. McClure.

21 MS. MCCLURE: Thank you, Your Honor.

22 **CROSS EXAMINATION**

23 **BY MS. MCCLURE:**

24 **Q.** Good morning, Dr. Mohr.

25 **A.** Hello.

1       **Q.**     Briefly, I want to return to your background that you  
2       discussed with Mr. Ackerman. To be clear, you did not  
3       specialize in healthcare or pharmaceutical marketing for any  
4       of your degrees, correct?

5       **A.**     Correct.

6       **Q.**     And you don't specialize in the pharmaceutical supply  
7       chain, correct?

8       **A.**     Correct.

9       **Q.**     You have no experience specific to the pharmaceutical  
10      marketing industry; is that correct?

11      **A.**     Correct.

12      **Q.**     You agree that there are unique features and aspects to  
13      the pharmaceutical industry, right?

14      **A.**     I do cite those in my report, yes.

15      **Q.**     One of those is the applicability of the Controlled  
16      Substances Act?

17      **A.**     Yes. I do cite that in my report.

18      **Q.**     You are not an expert on the Controlled Substances Act,  
19      right?

20      **A.**     No.

21      **Q.**     And another unique aspect of the pharmaceutical  
22      industry is the role of the Food & Drug Administration, or  
23      the FDA, right?

24      **A.**     Correct.

25      **Q.**     And you've never worked at the FDA?

1       **A.**    No.  I have not worked at the FDA.

2       **Q.**    And you've never published on the FDA's regulation of  
3       prescription medication or language and labeling regarding  
4       prescription medication?

5       **A.**    No, I have not.

6       **Q.**    And you don't consider yourself to be an expert on  
7       indications for prescription opioids or the labeling that  
8       goes on the outside of the package or with -- that is  
9       distributed with a prescription medication, including  
10      opioids?

11      **A.**    What was the question?

12      **Q.**    I'm sorry.  You don't consider yourself an indication  
13      on -- indications [sic] for which prescription opioids can  
14      be prescribed?

15      **A.**    I'm not an expert on that.

16      **Q.**    Okay.  And you're not an expert on the labeling that  
17      the FDA permits to be distributed with a prescription,  
18      including a prescription opioid, correct?

19      **A.**    No.  I have not claimed that expertise.

20      **Q.**    Okay.  And another unique aspect of the pharmaceutical  
21      industry is the role of the physician in prescribing  
22      medication, correct?

23      **A.**    Correct.

24      **Q.**    So, this is not an industry where we're talking -- your  
25      opinions are not talking about marketing directly to

1 consumers, correct?

2 **A.** Are you talking about physicians or consumers?

3 **Q.** I'm actually -- I switched my question to consumers.  
4 You're not talking about distributors marketing to  
5 consumers, right?

6 **A.** Do you mean patients?

7 **Q.** Correct.

8 **A.** I did just review the touch points that distributors  
9 had with patients in the documents that we looked at here  
10 this morning.

11 **Q.** But the individual in the marketing -- in the  
12 pharmaceutical industry, you're not an expert in the role of  
13 the physician in that industry and how physicians make the  
14 decisions on prescribing, correct?

15 **A.** I am not an expert in how physicians make decisions on  
16 prescribing.

17 **Q.** Okay. And you've never personally attended a medical  
18 or a pharmaceutical education course?

19 **A.** No, I have not.

20 **Q.** A different unique aspect that we haven't yet talked  
21 about of the pharmaceutical industry is the role of the  
22 pharmacy benefit manager, called a PBM, right?

23 **A.** Correct.

24 **Q.** And you would agree that that makes the pharmaceutical  
25 industry an even more complicated industry than we've

1 already talked about, correct?

2 **A.** Yes. I do detail the role of the PBMs in my report.

3 **Q.** But you've never worked for a PBM, correct?

4 **A.** No. I'm a marketing professor.

5 **Q.** Okay. And you've never worked for a pharmaceutical  
6 manufacturer or distributor, right?

7 **A.** No, I have not.

8 **Q.** And have you ever published any articles on  
9 pharmaceutical distributors?

10 **A.** I have not published on pharmaceutical distributors.

11 **Q.** Or spoken at a conference on pharmaceutical  
12 distributors?

13 **A.** I have not spoken at a conference on pharmaceutical  
14 distributors.

15 **Q.** And you've never spoken on a conference of MARC that  
16 relates to the marketing of controlled substances, right?

17 **A.** I've not spoken at a conference on marketing of  
18 controlled substances.

19 **Q.** And I believe that you've published a couple of  
20 articles that do relate to the pharmaceutical industry, but  
21 neither of those relate to controlled substances, correct?

22 **A.** Correct.

23 **Q.** In fact, prior to being retained in this case, is it  
24 true that you've never reviewed any materials sent by a  
25 wholesale distributor to a pharmacy, correct?



1       **A.**     Correct.

2       **Q.**     And you testified on direct, I believe that the words  
3       that you used were, I'm an academic nerd?

4       **A.**     Yes, I am.

5       **Q.**     I -- I share that affinity with you. And that the way  
6       you learned about the pharmaceutical industry for this case  
7       included buying books and reading articles written by  
8       experts in the pharmaceutical industry, right?

9       **A.**     Correct.

10      **Q.**     All of the materials that related specifically to the  
11      defendants in this case, ABDC, McKesson and Cardinal, those  
12      materials were provided to you by counsel for plaintiffs,  
13      Motley Rice, correct?

14      **A.**     Yes.

15      **Q.**     And you've talked about how you reviewed a lot of  
16      documents, but you did not request access yourself to a  
17      document database or a repository, correct?

18      **A.**     I did not request access to a database.

19      **Q.**     Okay. So, shifting to distributors, you understand  
20      that the technology and information systems that  
21      distributors have are for all products they ship and all  
22      types of medications, not just for prescription opioids,  
23      correct?

24      **A.**     I do understand that.

25      **Q.**     And you're aware that distributors distribute/ship many

1 other medications well outside of pharmaceutical opioids  
2 like insulin, heart medication, et cetera, right?

3 **A.** Yes, I do.

4 **Q.** And you have no awareness of the percentage of opioids  
5 versus non-opioids that distributors have shipped nationwide  
6 or into Huntington-Cabell, correct?

7 **A.** No, I was not asked to do that analysis.

8 **Q.** So, that was not within the scope of your task?

9 **A.** Correct.

10 **Q.** Okay. So, we're talking about marketing and I believe  
11 in your report you outline two different kinds or types of  
12 marketing. One is marketing that differentiates between  
13 competitors, correct?

14 **A.** Yes.

15 **Q.** Called brand marketing?

16 **A.** Yes.

17 **Q.** Okay. And then there's another type of marketing that  
18 your report identifies as attempting to expand the demand  
19 for the entire market, which you call primary demand, right?

20 **A.** Yes. That's called indirect marketing.

21 **Q.** Okay. So, brand marketing is the type of marketing  
22 where you're asking a consumer or, in this case, a physician  
23 -- or, I'm sorry, a pharmacist, to choose your product over  
24 another company's product, correct?

25 **A.** I wasn't sure of the question.

1       **Q.**   Well, that's because I bumbled it.  So, brand marketing  
2       is the type of marketing where you're asking the purchaser,  
3       whoever that may be, to choose your product over someone  
4       else's product or all of these products over here, right?

5       **A.**   Correct.

6       **Q.**   Okay.  So, for example, you sit down at a diner.  I've  
7       already decided that I want to order a soda and the question  
8       is Pepsi versus Coke.  Is that an example of brand  
9       marketing?

10      **A.**   Technically, the decision of Pepsi versus Coke is brand  
11      marketing, but the way Coke distribution works is they  
12      actually are available on an exclusive basis with different  
13      types of stores.  So it's not a really --

14      **Q.**   So, maybe Coke was a bad example.  Let's say I'm in a  
15      place and they have two things for me to choose from, RC  
16      Cola or Pepsi?

17      **A.**   Yeah.  When you go to the grocery store and you're at  
18      the point of purchase, then you are making a decision about  
19      a brand at the point of purchase.

20      **Q.**   Okay.  And so, it's still a single point of purchase?  
21      There's one drink being sold.  The question is which brand  
22      is going to be the drink, correct?

23      **A.**   Yes.  You're oversimplifying, but that's fine.

24      **Q.**   I know I am and I know that you are a Regents Professor  
25      and know a lot more about marketing than I do, but I want to

1 make sure that I and the Court have a distinction between  
2 this kind of marketing and then the other kind.

3 So, let's talk about market expansion. So, that  
4 strategy is aimed at the whole product class. That's market  
5 expansion, right?

6 **A.** I didn't use the word market expansion. I called it  
7 indirect marketing, which is designed to grow sales for the  
8 product class as a whole.

9 **Q.** Okay. So, that would be an example of I'm walking down  
10 the street. It's a hot day. I'm not generally a soda  
11 drinker, but there's a soda -- one of those people standing  
12 outside of a convenience store, right, and they're just  
13 advertising the fact that the convenience store sells cold  
14 beverages. That benefits all the makers of cold beverages,  
15 right?

16 **A.** Yes. I see your point.

17 **Q.** And I know it's oversimplified.

18 **A.** I see your point. I think I would go back to my  
19 Industry Trade Association when we try to get more people to  
20 go outdoors. It's designed to grow sales for the industry  
21 as a whole.

22 **Q.** Okay. So, the two main types of marketing that we've  
23 discussed here, is it fair to say that many of them can be  
24 categorized into either brand marketing or market expansion?

25 **A.** Do you mean you and I talking or do you mean all day?

1 Q. Today. Your testimony today.

2 A. Okay. I did talk about both types of marketing without  
3 using that -- those words, so I'm glad you've pulled them  
4 out of my report.

5 Q. Okay. So, let's also talk about just some basics about  
6 prescription opioids. You know that prescriptions are  
7 written by doctors?

8 A. I do know that.

9 Q. Okay. And do you know what detailing is? I think you  
10 talked about your father, who is in the prescription  
11 industry and so you --

12 A. No. My father is a physician.

13 Q. Oh, I'm sorry.

14 A. Yeah.

15 Q. So, your father was visited by detail people, I think  
16 you said, correct?

17 A. Correct, yes. Yes.

18 Q. And a detail person, that's when a pharmaceutical  
19 representative goes to visit a doctor to encourage that  
20 doctor to prescribe that manufacturer's products; is that  
21 right?

22 A. Correct.

23 Q. And you are not aware of the distributors in this case  
24 ever engaging in detailing of physicians, correct?

25 A. Yes. We did talk about this morning in my evidence

1 that we looked that the distributors did role play and train  
2 the detailers for the manufacturer salespeople.

3 **Q.** That's not my question. My question was you're not  
4 engaged -- you're not aware of distributors engaging in the  
5 detailing of a physician; in other words, a distributor  
6 doing that detailing at the physician's office like your  
7 father's office?

8 **A.** No. Distributors don't do that.

9 **Q.** Thank you. And, of course, you know that in order to  
10 get a prescription opioid legally dispensed a patient has to  
11 present a valid prescription written by a medical  
12 professional, right?

13 **A.** Yes.

14 **Q.** Okay. And many of the marketing activities you've  
15 described in your report are ones that you believe are  
16 directed to pharmacies, correct?

17 **A.** Many of them are.

18 **Q.** Okay. And you, of course, understand that pharmacists  
19 can't themselves prescribe?

20 **A.** I do understand that.

21 **Q.** And so, you also understand that without a  
22 prescription, a medication that a distributor ships to a  
23 pharmacy is simply going to stay on that shelf until a  
24 patient comes in with a valid prescription written by a  
25 medical professional and requests that to be filled, right?

1       **A.**    If you're understanding if I understand that, I do  
2       understand that.

3       **Q.**    Okay, thank you. And you understand that the FDA is  
4       ultimately responsible for providing a manufacturer with  
5       approval to manufacture any drug, including opioids?

6       **A.**    Yes.

7       **Q.**    And you understand that the FDA actually has to approve  
8       the language that goes on that medication, the communication  
9       to the patient that comes with the medication as FDA  
10      approved?

11      **A.**    I do understand that.

12      **Q.**    And you understand that the label's language is all  
13      that is permitted to be said about a product's risks and  
14      benefits?

15      **A.**    I do understand that.

16               MR. ACKERMAN: Objection, Your Honor. That called  
17      for a legal conclusion. It's also arguably outside the  
18      scope.

19               MS. MCCLURE: I'm asking about --

20               THE COURT: Overruled. Go ahead.

21               MS. MCCLURE: Thank you.

22               BY MS. MCCLURE:

23      **Q.**    I want to be clear about something given the topic of  
24      your testimony today. It's essentially whether certain  
25      activities do or do not constitute marketing, correct?

1     **A.**    No.  I wouldn't characterize it that way.  I was asked  
2     did distributors engage in marketing.

3     **Q.**    Okay.  Then I'll use your formulation.  You are here  
4     today to discuss the answer to the question did distributors  
5     engage in marketing, correct?

6     **A.**    Correct.

7     **Q.**    Okay.  You were not asked to evaluate the veracity, the  
8     true or falseness, of the marketing messages themselves in  
9     any way, correct?

10    **A.**    No, I was not.

11    **Q.**    And so, you have not identified anything that is false  
12    or misleading in the documents you reviewed to prepare your  
13    report, correct?

14    **A.**    I did not address the truth or veracity of the  
15    marketing documents.

16    **Q.**    And, in fact, you have no reason to believe that any of  
17    the statements in the distributors' marketing were a lie,  
18    correct?

19    **A.**    I'm just a little confused about what I'm being asked.  
20    So, the marketing messages --

21    **Q.**    So, let me -- let me rephrase it.  You -- you did not  
22    evaluate the truth or veracity, falsity, misleading-ness at  
23    all of any of the materials you reviewed?  That wasn't your  
24    task, right?

25    **A.**    Yeah.  If you're asking if the marketing messages were



1 a lie, I didn't look at the veracity of the marketing  
2 messages.

3 **Q.** Okay. So, you don't have any opinion here today that  
4 anything was false or misleading, correct?

5 **A.** Correct. I have no opinion about that.

6 **Q.** Thank you. And, Dr. Mohr, you reviewed -- I'm sorry.  
7 Let me start that again.

8 You did not attempt to disentangle the effect of  
9 distributors' marketing activities, as you call them, from  
10 any other factors to determine the impact on sales of  
11 prescription opioids, correct?

12 **A.** The way that that would be done is through a  
13 mathematical model. I did not do a mathematical model.

14 **Q.** Is that model called an econometric study?

15 **A.** Yes, it is.

16 **Q.** Okay. And you were not asked to do that mathematical  
17 model in this case, correct?

18 **A.** No.

19 **Q.** Meaning no, you were not asked to do it; am I correct  
20 in this statement?

21 **A.** I was not asked to do it.

22 **Q.** Thank you.

23 Shifting to Huntington and Cabell, who are the  
24 plaintiffs here in this case, you have not similarly  
25 conducted any specific analysis to address the effect of

1 distributors' marketing on any pharmacy on the distribution  
2 of prescription opioids in Huntington or Cabell, correct?

3 **A.** Correct.

4 **Q.** And, in fact, you have not seen any documents that are  
5 specific to West Virginia or these two specific  
6 jurisdictions, correct?

7 **A.** Correct.

8 **Q.** And you have not studied the pharmacies in the West  
9 Virginia area in preparing your report?

10 **A.** I did not study the pharmacies.

11 **Q.** And you do not know whether the ordering function at a  
12 pharmacy is something done by the pharmacists in the  
13 Huntington-Cabell pharmacies that are at issue here or  
14 something done by non-pharmacist personnel in those  
15 pharmacies, correct?

16 **A.** Correct.

17 **Q.** And you don't know, in fact, if a person orders at all,  
18 as opposed to an automated inventory management system,  
19 correct?

20 **A.** Correct.

21 **Q.** And you cannot point me to any instances where a  
22 distributor defendant in this case advertised a  
23 manufacturer's opioid products to a retail pharmacy in  
24 Huntington or Cabell, correct?

25 **A.** Correct.

1 Q. Okay. Let's talk about some specific documents. The  
2 first one I want to talk about is the P-43299. That is the  
3 glimmer button, two-page e-mail document. Let me know when  
4 you've had a chance to look at that.

5 A. Yes, I have it.

6 Q. Okay. Now, this is a document from 1995, correct?

7 A. It's dated December 21st, 1995.

8 Q. And it relates to a company called Bergen Brunswig,  
9 right?

10 A. Correct.

11 Q. And so, you've talked about digital marketing and a  
12 glimmer button that pops up when a pharmacist is entering  
13 the system to order a prescription opioid, correct?

14 A. Yes. I'm sorry if I used the wrong word. This talks  
15 about a glimmer button, but digital marketing wasn't even a  
16 thing until much later.

17 Q. Okay. So, the point that I'm asking you about is, so  
18 it says glimmer button will show up when a pharmacist calls  
19 for a targeted competitor prescription opioid. Pushing the  
20 button will then reveal information on OxyContin to the  
21 pharmacist; right, that's what it says?

22 A. That's what it says.

23 Q. So, if a pharmacist goes to order a competitor product,  
24 that is when this glimmer button appears and encourages the  
25 pharmacist to instead choose a different product, right?

1       **A.**     Correct.

2       **Q.**     But you know that the glimmer button is only going to  
3       pop up if the pharmacist is already ordering a prescription  
4       opioid, correct?

5       **A.**     Yes.    One of the 25 competitors listed here.

6       **Q.**     Okay.   And you don't know what information a pharmacist  
7       is then provided on OxyContin if, in fact, they do push the  
8       glimmer button?  You don't know what happens, right?

9       **A.**     No.    That detail was not provided here.

10      **Q.**     And you have no evidence that a pharmacist in West  
11      Virginia, Huntington, Cabell, ever pushed that glimmer  
12      button, correct?

13      **A.**     I have no evidence of that.

14      **Q.**     And you don't know if a West Virginia pharmacist  
15      instead ignored the glimmer button and chose to proceed with  
16      the original purchase decision that they had made?

17      **A.**     I don't have evidence of that.  I think that was the  
18      question.

19      **Q.**     Correct.  And so, this is a brand selection document.  
20      If we go back to those couple of buckets that we were  
21      talking about earlier, this is in the brand selection.  Pick  
22      my product over a competitor's, correct?

23      **A.**     This would fall in that category.

24      **Q.**     But there's still only one sale; it's just a question  
25      of which brand?

1       **A.**    According to the glimmer button, yes.

2       **Q.**    Okay.  Let's turn to P-43300.  That is the document  
3       that, at the top, says Managed Care Recap.  Oh, you have it  
4       already.  Thank you.

5             And so you testified that -- well, first of all, let me  
6       back up.  This is a document that references Bergen  
7       Brunswick, correct?

8       **A.**    Yes.

9       **Q.**    And so, you are aware that this document pre-dates 2001  
10       when AmerisourceBergen -- I'm sorry -- when  
11       AmerisourceBergen and Bergen Brunswick merged, correct?

12       **A.**    Yes.

13       **Q.**    So, there's no date on the document, but we know it's  
14       2001 or earlier, right?

15       **A.**    Yes.

16       **Q.**    And this relates to direct mail services going to  
17       certain pharmacy customers, correct?

18       **A.**    Yes.

19       **Q.**    You cannot tell me how many pharmacies in West  
20       Virginia, Huntington, Cabell actually received any of these  
21       mailers, correct?

22       **A.**    Correct.

23       **Q.**    And is that because at the bottom of the document it  
24       says attached, please find a list of the good neighbor  
25       pharmacies to be included in this mailing, right?

1       **A.**     Yes.

2       **Q.**     And we don't actually have that document, do we?

3       **A.**     I didn't have access to that document.

4       **Q.**     And so, that document, according to this one-page  
5       summary, would be a list of the 1,800 pharmacies that were  
6       participating at a national level in this, correct?

7       **A.**     Yes, a national level.

8       **Q.**     And so, if you had that document you would be able to  
9       review, in fact, whether any of these are in  
10      Cabell-Huntington, correct?

11      **A.**     Yes. That would be nice to have.

12      **Q.**     And we don't have that because that wasn't produced by  
13      Purdue when it produced this document, right?

14      **A.**     Correct.

15      **Q.**     So, you don't know even -- let's say these were mailed  
16      to a pharmacy in Huntington-Cabell, which you don't know,  
17      right?

18      **A.**     Yes.

19      **Q.**     She just needs a verbal answer.

20             You don't know whether anyone actually read any of  
21      these mailers, right?

22      **A.**     I don't know that anyone read the mailers.

23      **Q.**     And you have no -- no information that anyone took any  
24      action in response to these mailers?

25      **A.**     Right. I'm getting a little concerned here that --

1 that marketers know that these things create awareness. And  
2 so, you're asking me to say do I know that people read them.  
3 Well, typically what we do is we have a funnel and we know  
4 that there is a certain percentage of people who do read and  
5 open them.

6 **Q.** Dr. Mohr, that is not my question.

7 MS. MCCLURE: And, Your Honor, I would move to  
8 strike the testimony that is speculation regarding that. My  
9 question is --

10 MR. ACKERMAN: And, Your Honor -- I would ask that  
11 the witness be allowed to finish her answer.

12 MS. MCCLURE: Your Honor, my question was about  
13 whether the -- anyone receiving them would have taken  
14 action.

15 THE COURT: The answer was non-responsive, so I'll  
16 ignore the answer, but you can re-ask the question, Ms.  
17 McClure.

18 BY MS. MCCLURE:

19 **Q.** You have no information that anyone ever took action  
20 based on these mailers, correct?

21 **A.** Correct.

22 **Q.** Thank you. And, in fact, you don't know what the  
23 content was of those six mailers that are listed in that?

24 **A.** No.

25 **Q.** And you have no information to suggest that Bergen

1 Brunswick created any of the content in those mailers you  
2 haven't seen and don't know to whom they were distributed,  
3 correct?

4 **A.** Right.

5 **Q.** Okay. Let's look at Tab P-087 -- no -- P-08272, which  
6 is that four-page Purdue document from 1997. Let me know  
7 when you have that.

8 **A.** I have it.

9 **Q.** So, this is a 1997 internal Purdue memo, right?

10 **A.** Yes.

11 **Q.** And that summarizes Purdue's internal views on its  
12 relationship with four distributors?

13 **A.** Yes.

14 **Q.** And this is all about targeting pharmacy customers,  
15 correct?

16 **A.** Yes.

17 **Q.** And, again, if we go back to your report and the part  
18 of your report that I was focused on in the beginning, this  
19 is all about brand selection, correct, this bucket over  
20 here?

21 **A.** Correct.

22 **Q.** Okay. Let's look at P-26091, which is a longer  
23 document. Let me know when you have that document.

24 **A.** I have it.

25 **Q.** Okay. Again, this document generally is about brand



1 selection by pharmacies?

2 **A.** I wouldn't characterize it that way. It is offering  
3 services from AmerisourceBergen to the manufacturers.

4 **Q.** Those services being offered to the manufacturers would  
5 all then be to allow the manufacturers to target their own  
6 brands?

7 **A.** To market their own brands.

8 **Q.** Thank you. Okay. Let's talk about Tab -- Document  
9 P-43234. That is a Mallinckrodt produced document. Let me  
10 know when you have that.

11 **A.** I have it.

12 **Q.** Okay. You're very good at managing documents up there.  
13 So, thank you.

14 So, this is a document that is about Mallinckrodt  
15 encouraging AmerisourceBergen to switch secondary slots to  
16 primary physicians. Do you see that in number 2 there?

17 **A.** Yes.

18 **Q.** This -- you've talked about this being a document about  
19 fentanyl. This is not a document about fentanyl, though, is  
20 it? It's a larger program that includes AmerisourceBergen's  
21 purchases from all of Mallinckrodt's products.

22 **A.** I am not sure that I'm following you. It says at the  
23 bottom, I'll send you the ABC fentanyl volumes by month and,  
24 if you look on the back, those fentanyl sales volume by  
25 month are listed there.

1       **Q.**     Right. But what I'm saying is that this is about how  
2       AmerisourceBergen could -- in order to achieve the next  
3       level of rebate, one of the ways that Mallinckrodt is  
4       pointing out it could do that is to change its fentanyl  
5       ordering, correct?

6       **A.**     Yes.

7       **Q.**     Okay. But you understand that this program overall,  
8       the VIP program, is not at all related to opioids? Instead,  
9       the suggestion from Mallinckrodt is just that you could  
10      change your fentanyl ordering in order to reach the next  
11      level of rebate, right?

12      **A.**     Correct.

13      **Q.**     This is a snapshot in time, right? We have no  
14      information to suggest or know whether AmerisourceBergen  
15      said, hey, Mallinckrodt, that's a good idea, not a good  
16      idea, took any action in response to this Mallinckrodt  
17      document at all, correct?

18      **A.**     Correct.

19      **Q.**     Let's look at P-43333. Let me know when you have that.

20      **A.**     I do.

21               MS. MCCLURE: And, Your Honor, I just want to make  
22      clear for the purposes of my questioning here today that we,  
23      of course, maintain our objections to all of these documents  
24      and are questioning the witness simply in line --

25               THE COURT: I think the record is clear on that,

1 Ms. McClure. It should be.

2 MS. MCCLURE: Thank you.

3 BY MS. MCCLURE:

4 Q. So, this is about a drug called Fentora, right?

5 A. Yes.

6 Q. Do you know whether this Fentora segmentation analysis  
7 was ever actually completed by Xcenda?

8 A. I had a sequence of documents in my evidence or in my  
9 report that suggests they did.

10 Q. Do you -- but you have no information, even if the  
11 segmentation analysis was completed, to know whether Teva  
12 implemented anything as a result of this analysis, correct?

13 A. To be honest, I'd need to look at my report to answer  
14 that accurately.

15 Q. Okay. So, without looking at your report, you cannot  
16 tell me whether Teva implemented any part of this  
17 segmentation analysis?

18 A. The reason that I'm hesitating is there were so many  
19 documents about this Fentora target plan between the two  
20 companies that I don't want to misspeak and say that it  
21 wasn't done. This is part of an ongoing strategic  
22 partnership and it could be that I have the evidence that it  
23 was.

24 Q. Okay. But sitting here today, you don't know without  
25 looking at your report?

1     **A.**     Without looking at my report given the hundreds of  
2     documents that I reviewed.

3     **Q.**     Okay. So, we will come back to that. If it was  
4     implemented, which you don't know sitting here today, you  
5     don't know whether this would have increased prescription  
6     opioid prescribing or did increase prescription opioid  
7     prescribing, correct?

8     **A.**     Did you ask if I have evidence that it increased it?

9     **Q.**     Correct. Correct.

10    **A.**     Yeah. If the question is did I have evidence that it  
11    increased, the correct answer is, no, I have no evidence.

12    **Q.**     Okay. Let's look at P-43335. Now, this is a document  
13    called Payer Value Proposition Updated Recommendations and  
14    Timelines, correct?

15    **A.**     Correct.

16    **Q.**     And so, it's a recommendation?

17    **A.**     This is a recommendation.

18    **Q.**     You don't know if anything happened with this  
19    recommendation?

20    **A.**     No, I don't.

21    **Q.**     And so, you don't know if anything was implemented by  
22    Teva in response to this recommendation?

23    **A.**     No, I don't.

24    **Q.**     And so -- okay. You talked briefly about continuing  
25    medical education conferences. You don't believe that

1 distributors controlled any of the information that would  
2 have been told to doctors at a continuing medical education  
3 conference, right?

4 **A.** I have evidence in my report that the distributors were  
5 used to keep that information off the manufacturers' books.

6 **Q.** What are you talking about?

7 **A.** If you'd like me to point you to the page in the report  
8 that cites the document that says that.

9 **Q.** What I'd like you to do is tell me what you mean. You  
10 have information that suggests that distributors controlled  
11 the content that went to doctors at continuing medical  
12 education conferences?

13 **A.** Yes.

14 **Q.** Okay. Can you tell me what that is?

15 **A.** Yes. I have to refresh my memory.

16 **Q.** I'm asking you, Dr. Mohr, to tell me sitting here today  
17 testifying in this case whether you can recite that  
18 information or not?

19 **A.** I have evidence that the distributors hired the  
20 speakers to speak at continuing medical conferences to keep  
21 that information off the manufacturer' books.

22 **Q.** That's not my question, Dr. Mohr. My question is a  
23 different question. My question is do you believe that the  
24 information that the speakers spoke at a continuing medical  
25 education conference was information that was -- you don't

1 believe that that was information that the distributors told  
2 a speaker to speak, correct?

3 **A.** Again --

4 **Q.** I'm asking a very specific question and I would  
5 appreciate an answer to my very specific question.

6 **A.** I don't -- I can't say no to that.

7 **Q.** You can't say no to what?

8 **A.** Your question.

9 **Q.** Meaning you think that you do have evidence that  
10 speakers at continuing medical education conferences were  
11 told what to say by a distributor?

12 **A.** Yes.

13 **Q.** We'll come back to that. You understand patient  
14 adherence, that is something where a prescription has  
15 already been written by the time that the concept of patient  
16 adherence comes in, correct?

17 **A.** Yes.

18 **Q.** And so, patient adherence services can only come into  
19 play after a patient has a prescription in hand from a  
20 licensed doctor, right?

21 **A.** Yes.

22 **Q.** Okay.

23 MS. MCCLURE: Your Honor, may I have a moment?

24 THE COURT: Yes.

25 MS. MCCLURE: Thank you.

1 (Pause)

2 BY MS. MCCLURE:

3 **Q.** Dr. Mohr, back to the continuing medical education. I  
4 think what you're saying -- tell me if this is right. I  
5 think what you're saying is that you believe that there was  
6 a distributor who assisted in lining up a speaker for a  
7 continuing medical education because then the distributor  
8 would have the charge for that continuing education on its  
9 books; is that what you're saying?

10 **A.** Yes.

11 **Q.** Do you have any information to suggest that any  
12 information given out at a continuing medical education  
13 seminar was false or misleading in this respect?

14 **A.** No. No.

15 MS. MCCLURE: One moment.

16 (Pause)

17 MS. MCCLURE: Thank you, Dr. Mohr, for your time  
18 today. I have no further questions, but I do expect that my  
19 colleagues will.

20 THE WITNESS: Thank you.

21 THE COURT: Thank you, Ms. McClure.

22 Mr. Hester, are you next?

23 MR. HESTER: Yes, I am, Your Honor. Batting in  
24 the second spot today.

25 THE COURT: Okay.

**CROSS EXAMINATION****MR. HESTER:**

**Q.** Good morning, Dr. Mohr.

**A.** Hello, Mr. Hester.

**Q.** Dr. Mohr, let me begin by going through the points that you covered in your direct examination. I believe I kept track. I believe you went through 15 marketing propositions and let me just see if I've got them right. Situational analysis, market research, value proposition design, marketing plans, fee for services, savings cards, product launches, sales promotion offers, educational mailings, patient adherence programs, sales force training, thought leadership, articles in medical journals, coordination with key opinion leaders and public relations. I think that's the list of 15 you described.

**A.** That's pretty good. You left out segmentation.

**Q.** Okay. And market segmentation?

**A.** Yes.

**Q.** And am I right that there's nothing improper about any of those marketing activities?

**A.** No.

**Q.** And am I also right that those kinds of marketing activities are engaged in broadly across many industries in this economy?

**A.** Yes.



1 Q. So, there's nothing unusual about those marketing  
2 activities vis-a-vis prescription opioids, correct?

3 A. Correct.

4 Q. And am I also right that all of those marketing  
5 activities that you've described, that you identified from  
6 the documents you had reviewed, those were all available  
7 across a wide range of products that the distributors  
8 distribute, correct?

9 A. If you're asking if I reviewed documents for other  
10 types of products -- is that the question?

11 Q. No. My question was a little different. Is it your  
12 understanding that all of these activities that you've  
13 described were provided by distributors without reference to  
14 the nature of the product covered by those activities?

15 A. So, my understanding is that the distributors would use  
16 these services across a wide range of products.

17 Q. And that's because the distributors, in fact, sell a  
18 very wide range of products to pharmacies, correct?

19 A. Correct.

20 Q. And the distributors don't focus simply on selling one  
21 individual product, do they?

22 A. No.

23 Q. Their business model is to sell an entire portfolio and  
24 to have as wide a range of a portfolio with a pharmacy as  
25 they possibly can, correct?

1       **A.**     Correct.

2       **Q.**     And that's different from a manufacturer that may have  
3       one or two products that it's particularly focused on  
4       selling, correct?

5       **A.**     Some companies have one or two products.

6       **Q.**     Well, and you are aware that any one of a number of  
7       drug manufacturers would have a narrower product line that  
8       they're selling than the distributors, correct?

9       **A.**     Right.

10      **Q.**     Do you know the percentage of the distributors' product  
11      line that is made up of opioids as compared to non-opioid  
12      products?

13      **A.**     No, I do not.

14      **Q.**     And you understand that the distributors' product line,  
15      the product line they sell to their pharmacy customers, it  
16      covers tens of thousands of products?

17      **A.**     Correct.

18      **Q.**     And so, you understand that the products that  
19      distributors sell to their pharmacy customers are much wider  
20      than just opioids, correct?

21      **A.**     I do understand that.

22      **Q.**     And do you agree that because manufacturers are focused  
23      on selling individual products the nature of their  
24      promotional activity is going to differ from the nature of  
25      the promotional activity by distributors?

1       **A.**     Yes.

2       **Q.**     And do you understand, as well, that pharmaceutical  
3 manufacturers are responsible for securing FDA approval for  
4 a drug?

5       **A.**     Yes, I do.

6       **Q.**     And you understand that the manufacturer is obligated  
7 as a part of that process to submit data from clinical  
8 trials?

9       **A.**     I do.

10      **Q.**     And you're not aware of any evidence that a distributor  
11 conducted clinical trials to secure the approval of a  
12 prescription opioid, are you?

13      **A.**     No. I did not testify to that.

14      **Q.**     And you understand that based on these clinical trials  
15 that manufacturers run that they develop the content about  
16 what the addiction risks are and the benefits or the  
17 efficacy are for a particular prescription opioid, correct?

18      **A.**     Yes, I do.

19      **Q.**     And that information about the risks of a particular  
20 prescription opioid and the efficacy of a particular  
21 prescription opioid comes from the manufacturer, correct?

22      **A.**     Correct.

23      **Q.**     And that information about the risks of a particular  
24 prescription opioid and the efficacy of the opioid is also  
25 reflected on the label that's approved by the FDA, correct?

1       **A.**     Yes.

2       **Q.**     And in terms of developing that label, the label that  
3       is ultimately approved by the FDA, the manufacturer is  
4       responsible for making representations to the FDA about the  
5       risks and the benefits of a particular opioid, correct?

6       **A.**     Yes.

7       **Q.**     And the FDA ultimately has to approve the label  
8       information that's submitted by the manufacturer based on  
9       the information the manufacturer has provided about the  
10      risks and the efficacy of a particular prescription opioid,  
11      correct?

12      **A.**     Yes.

13      **Q.**     And the label that the FDA approves for a particular  
14      prescription opioid includes the uses, the efficacy, the  
15      risk profile and the benefits of the medication, correct?

16      **A.**     Yes.

17      **Q.**     And so, whatever the FDA approves for a particular  
18      label, for a particular prescription opioid, that's all  
19      supposed -- that's all that a manufacturer is permitted to  
20      convey to the public about the risks and the efficacy of  
21      that product, correct?

22      **A.**     Correct.

23      **Q.**     And distributors do not develop the labeling statements  
24      about the risks and the efficacy of a particular  
25      prescription opioid, correct?

1       **A.**     Correct.

2       **Q.**     So, when distributors provide a program to communicate  
3     advertising to pharmacies about particular prescription  
4     opioids, the content for that advertising comes from the  
5     manufacturer, correct?

6       **A.**     With the exception of the value proposition designs  
7     that I've talked about previously. That value proposition  
8     design was done in consultation with the distributors.

9       **Q.**     I was asking you about advertising.

10      **A.**     Okay.

11      **Q.**     And when -- when distributors communicate advertising  
12     to pharmacies about particular prescription opioids the  
13     content for that advertising comes from the manufacturer,  
14     correct?

15      **A.**     Yes.

16      **Q.**     And so, distributors are providing the communication  
17     form and the manufacturers are providing the messaging or  
18     the content, correct?

19      **A.**     Yes.

20      **Q.**     And so, that would be much like if an advertisement  
21     appeared on a website, the website is providing the channel  
22     for the communication, but the substance or the content of  
23     the communication is coming from whoever purchased the  
24     advertisement, correct?

25      **A.**     Correct.

1       **Q.**   And you understand that not all manufacturer  
2       advertising or promotional activity is intended to expand  
3       the market for a particular product, correct?

4       **A.**   Is this getting to the brand versus direct versus  
5       indirect?

6       **Q.**   Yes.   Some advertising activity is meant to build  
7       awareness, not necessarily to have a specific linear impact  
8       on sales, correct?

9       **A.**   Yes.   I think that's an oversimplification, but I can  
10      agree with that.

11      **Q.**   But some marketing is intended to provide awareness or  
12      information about a product, correct?

13      **A.**   Yes.

14      **Q.**   And some marketing is intended to inform product  
15      selection within a product type, correct?

16      **A.**   Yes.

17      **Q.**   So, you might have, for instance, different  
18      prescription opioids that might be available for purchase or  
19      might be available for a particular prescription and the  
20      question is which choice is made between those individual  
21      prescription opioids, correct?

22      **A.**   Yes.

23      **Q.**   And that would be one form of marketing activity that a  
24      manufacturer might focus on trying to expand its sale after  
25      a prescription is written, correct?

1       **A.**    I think so.  I'm not sure that I'm following the  
2       sequence.  It's just not the way it makes sense to me, so --

3       **Q.**    Well, sometimes things may make sense to me.

4       **A.**    Oh, yeah.  Yeah.

5       **Q.**    I'll try to keep on the same page with you.

6       **A.**    Yeah.  Yeah.  Yeah.

7       **Q.**    And you're aware, for instance, in the pharmaceutical  
8       industry that there may be alternative generic versions of a  
9       particular drug, correct?

10      **A.**    Yes.

11      **Q.**    And that the generic manufacturers may compete among  
12      each other for a share of the sales of those prescriptions  
13      for a particular drug, correct?

14      **A.**    Yes.

15      **Q.**    And so, for instance, a doctor might write a  
16      prescription for a particular drug, a particular  
17      prescription opioid, and the question then becomes  
18      competition among the generics to supply that particular  
19      prescription, correct?

20      **A.**    Correct.

21      **Q.**    And that's one form of marketing activity focusing not  
22      on expanding the overall sales of the category but rather on  
23      choice between the individual manufacturer within the  
24      category, correct?

25      **A.**    Yes.  That -- that is true.

1 Q. And you're aware that there's, in fact, a significant  
2 amount of competition among generic pharmaceutical  
3 manufacturers when they make an identical product?

4 A. Yes.

5 Q. And so, for instance, for some opioids there may be as  
6 many as five, or six, or seven different generics that are  
7 manufacturing that particular opioid?

8 A. Yes.

9 Q. And so, a part of the marketing activity may be not to  
10 expand the overall sales in the aggregate but rather to  
11 effect choice between which generic gets the sale, correct?

12 A. Yes.

13 Q. So, in that circumstance, the return on investment for  
14 a particular manufacturer's marketing program might well be  
15 vis-a-vis other competitors for that same prescription,  
16 correct?

17 A. Yes.

18 Q. You also agree that one of the ways marketing can be  
19 effective is to build relationships; in other words, build  
20 relationships between a distributor and a pharmacy by  
21 providing value added services?

22 A. Correct.

23 Q. And that can also be true as between a manufacturer and  
24 a distributor, that the distributor wants to build a  
25 stronger relationship with the manufacturer, correct?



1       **A.**     Correct.

2       **Q.**     And that's a -- that's a legitimate form of marketing  
3       that isn't necessarily focused on overall sales growth but  
4       rather on relationship expansion, correct?

5       **A.**     Yes. I just feel compelled to say that, as I stated  
6       yesterday, we start with awareness. We go to influence.  
7       And we go to sales. So, all of these ultimately are trying  
8       to culminate in the sales.

9       **Q.**     But many, many forms of marketing are more around  
10      relationship building than they are delivering some specific  
11      value in terms of expanded demand, correct?

12      **A.**     I don't agree with that. Relationship marketing, the  
13      purpose is ultimately to grow sales.

14      **Q.**     Well, but for instance, for a distributor, a  
15      distributor is competing for the share of pharmacy sales,  
16      correct?

17      **A.**     Yes.

18      **Q.**     And so, a distributor wants to build a strong  
19      relationship with the pharmacy by providing value added  
20      services vis-a-vis the pharmacy, correct?

21      **A.**     To get a bigger percentage of the sales.

22      **Q.**     A bigger percentage of the sales of that pharmacy,  
23      right?

24      **A.**     Correct.

25      **Q.**     You're familiar with the concept of physician

1 detailing, correct?

2 **A.** Yes.

3 **Q.** And you understand that physician detailing relates to  
4 conveying the benefits and the product attributes about a  
5 particular drug to a doctor?

6 **A.** Yes.

7 **Q.** And you're not aware of any distributors that engaged  
8 in physician detailing, correct?

9 **A.** Yes. We went through this just previously.

10 **Q.** So, you're not aware of distributors engaging in  
11 physician detailing?

12 **A.** Physicians -- distributors did not detail physicians.

13 **Q.** And when you say physicians did not detail -- I'm  
14 sorry. I'll back up. When you say distributors did not  
15 detail physicians, you mean the distributors did not have  
16 sales forces that were dedicated to calling on physicians,  
17 correct?

18 **A.** That's what I mean.

19 **Q.** And man -- in contrast -- sorry. In contrast,  
20 manufacturers do call directly on physicians to describe the  
21 risks and the benefits of particular drugs, correct?

22 **A.** Correct.

23 **Q.** And, in fact, manufacturers maintain large sales  
24 detailing forces that have as their role calling  
25 consistently on doctors about particular products, correct?

1       **A.**     Correct.

2       **Q.**     And, in fact, manufacturers invest a substantial amount  
3       of money in those sales forces that call on doctors,  
4       correct?

5       **A.**     Correct.

6       **Q.**     And is it your understanding that when manufacturers  
7       have those sales details that are charged with calling on  
8       doctors the purpose is to expand the sales of their  
9       products?

10      **A.**     Yes.

11      **Q.**     And as part of their sales efforts and calling on  
12      doctors, you understand that manufacturers through their  
13      sales force make representations to the doctors about the  
14      risks and the benefits of the medications they're  
15      discussing, correct?

16      **A.**     Yes.

17      **Q.**     And, in particular, in relation to prescription  
18      opioids, manufacturers have large sales details that called  
19      on doctors and made representations about the risks and the  
20      benefits of particular prescription opioids, correct?

21      **A.**     Yes.

22      **Q.**     Now, I think we've gone through this before, so I won't  
23      spend too much time on it. You are not offering the opinion  
24      that any advertising communication of any sort or any  
25      marketing activity by any of the distributors was false or

1 misleading?

2 **A.** I am not offering an opinion on that.

3 **Q.** And you're not offering the opinion that any of the  
4 advertising or any of the marketing activity by any of the  
5 distributors in this case was in any way unlawful?

6 **A.** Correct.

7 **Q.** And you're not offering the opinion that any of the  
8 marketing activities by any of the distributors was  
9 improper, correct?

10 **A.** Correct.

11 **Q.** Let me now turn to a few of the specific documents.  
12 Dr. Mohr, you're pretty good with these documents.  
13 Plaintiffs' 42701, which is one of the ones that you looked  
14 at before.

15 And let me ask you, Dr. Mohr, if you could look at Page  
16 22 of this. And I'm sorry, Dr. Mohr. I'm looking at --  
17 yes, Page 22. And I'm using the numbers at the bottom  
18 right. There's a lot of numbers on these documents that  
19 have crept in over time, but I'm using the numbers on the  
20 bottom right, okay?

21 **A.** Thank you.

22 **Q.** And this is a page that you talked about where you said  
23 McKesson manufacturer marketing touches key points in the  
24 healthcare continuum. Do you see that page?

25 **A.** Yes. Uh-huh.

1 Q. You don't know whether this program was actually  
2 implemented, do you?

3 A. I do have evidence that McKesson did engage in the key  
4 point in the healthcare continuum talking to patients. So,  
5 I do have that.

6 Q. No. I'm asking you about something very specific.  
7 This is a specific proposal about McKesson manufacturer  
8 marketing, correct?

9 A. Yes.

10 Q. You don't have evidence, do you, that this program was  
11 implemented?

12 A. When you say "this program", are you -- this is a  
13 PowerPoint that pitches all their marketing services. So --

14 Q. Well, maybe since we're both just looking at a document  
15 and reading it together, let me start off with the page  
16 before, 21. Other marketing services are also available --

17 A. Right.

18 Q. -- via McKesson manufacturing and marketing, right? Do  
19 you see that?

20 A. I do.

21 Q. And do you understand this was a proposal or a pitch?

22 A. A pitch deck.

23 Q. And so, you don't know whether it was actually accepted  
24 and implemented, correct?

25 A. Not this particular pitch deck.

1       **Q.**     Right. And so, if you look over on Page 23 where it  
2       says manufacturers can use MMM as a single point across  
3       multiple business disciplines; do you see that?

4       **A.**     I do.

5       **Q.**     And so, what I wanted to ask you about is you're not  
6       aware of any manufacturer that actually implemented MMM,  
7       this particular program?

8       **A.**     In my experience, companies don't market marketing  
9       services with no intention to execute and deliver them.

10           MR. HESTER: Your Honor, I move to strike as  
11       speculative and not responsive.

12           MR. ACKERMAN: I would oppose that, Your Honor.

13           THE COURT: Pardon me?

14           MR. ACKERMAN: I would oppose that.

15           THE COURT: Well, I'll overrule the motion to  
16       strike and give it such weight as it deserves. And you may  
17       proceed, Mr. Hester.

18           MR. HESTER: Okay. Got it.

19           BY MR. HESTER:

20       **Q.**     Dr. Mohr, you don't know whether this particular  
21       program -- I'm not asking about your general experience.  
22       I'm asking about this particular program, MMM. You don't  
23       know if this was implemented?

24       **A.**     Not this pitch deck.

25       **Q.**     And I take it you didn't identify anything in this deck

1 that you consider to be improper?

2 **A.** No.

3 **Q.** And, in fact, many of the marketing activities that  
4 you've described today in your testimony and yesterday,  
5 these are very conventional across -- across the economy,  
6 correct?

7 **A.** Yes. I just feel like I'm -- I'm struck again by the  
8 juxtaposition that these are very conventional marketing  
9 strategies and the prior set of questioning was this is a  
10 very unique industry. So, you can't have conventional  
11 marketing strategies used for controlled substances and have  
12 both things happening at the same time.

13 **Q.** Well --

14 **A.** It's -- it's paradoxical.

15 **Q.** Well, the paradox is you can have specialized  
16 industries, but very conventional marketing activities,  
17 correct?

18 **A.** You could.

19 **Q.** And that's, in fact, what you've seen in your study  
20 across different industries? There may be particular  
21 attributes of different industries, but the marketing  
22 activities share a common shape, correct?

23 **A.** Correct.

24 **Q.** Let me ask you to turn to P-42508. This is the  
25 document headed Nucynta and Nucynta ER program review. Do

1 you see that?

2 **A.** Yes, I do.

3 **Q.** Let me ask you to look -- well, first, let me ask you a  
4 general question. You discussed a market update that's  
5 provided in this document, correct?

6 **A.** Yes.

7 **Q.** And there's nothing wrong with a distributor providing  
8 a -- an update on market trends to a manufacturer, is there?

9 **A.** There's nothing wrong with that.

10 **Q.** It's quite conventional, right?

11 **A.** It's part of the situation analysis.

12 **Q.** And if you could look at Page 11 of the document, this  
13 is where you previewed a co-pay card program. Do you see  
14 that?

15 **A.** Yes.

16 **Q.** You don't know whether this program was actually  
17 implemented, do you?

18 **A.** The data in this slide deck suggests that it was.

19 **Q.** So, you're just reading the slide deck and assuming it  
20 was?

21 **A.** No. It actually shows the results from the campaign on  
22 Page 14.

23 **Q.** But you're just reading the document? That's the basis  
24 of your knowledge? You're just looking at the document and  
25 assuming it was implemented?



1       **A.**    I don't think that McKesson made up the numbers on Page  
2       14.

3       **Q.**    You talked about the sampling program.  Sampling, I  
4       take it, is a common tool in marketing?

5       **A.**    Yes, it is.

6       **Q.**    Across many industries?

7       **A.**    Yes.

8               THE COURT:  How much more do you expect to have,  
9       Mr. Hester?

10              MR. HESTER:  Well, I've been chastened by Your  
11       Honor not to underestimate here.  I won't be -- it won't be  
12       two minutes, I'll say that.

13              THE COURT:  How many?

14              MR. HESTER:  It won't be two minutes.  And  
15       probably more like ten.

16              THE COURT:  Okay.  And you can restore your  
17       credibility with me, Mr. Hester, but --

18              MR. HESTER:  If I hit ten, Your Honor?

19              THE COURT:  Ms. Wicht, are you going to cross  
20       examine or somebody from your side?

21              MS. WICHT:  Yes, Your Honor, although I can assure  
22       the Court and the witness that nobody's schedule will be  
23       jeopardized by what I'm intending to do for the afternoon.

24              THE COURT:  Well, Dr. Mohr has to make a 4:30  
25       flight.

1 THE WITNESS: I need to leave at 4:30 for a 5:30  
2 -- 5:50 flight.

3 THE COURT: Oh, okay. Well, that's better.  
4 That's a lot better.

5 THE WITNESS: Thank you, everyone.

6 THE COURT: I don't have anything over the noon  
7 break today for a change, so I'm going to suggest we -- can  
8 we come back at 1:00 and then we'll maybe -- maybe knock off  
9 around 4:00 and that way we can be pretty sure we'll get  
10 through with Dr. Mohr? Is that all right?

11 MR. HESTER: That's fine by me, Your Honor.

12 THE COURT: Is that okay?

13 MS. MCCLURE: Yes, Your Honor.

14 THE COURT: Okay. Let's come back at 1:00 and you  
15 can step down and we'll see you back at 1:00, Dr. Mohr.

16 THE WITNESS: Thank you.

17 (Recess taken)

18 THE COURT: All right. Mr. Hester.

19 MR. HESTER: Thank you, Your Honor.

20 BY MR. HESTER:

21 **Q.** Dr. Mohr, before the lunch break, you had talked about  
22 continuing medical education programs. Do you recall that  
23 testimony?

24 **A.** Yes, I do.

25 **Q.** And are you aware that a number of the continuing

1 medical education programs, or CME programs, arranged for by  
2 distributors were for their pharmacists?

3 **A.** Yes. Some of them were.

4 **Q.** And are you aware that for some of those CME  
5 presentations the content was not prepared by distributors  
6 for those CME presentations, but it was prepared for by  
7 manufacturers or others?

8 **A.** Yes.

9 **Q.** We talked about the co-pay cards or assistance cards.  
10 Do you recall that in your testimony this morning?

11 **A.** Yes.

12 **Q.** And am I right that the co-pay cards apply after a  
13 patient has a prescription? In other words, a doctor has  
14 decided there's legitimate medical need and then the co-pay  
15 assistance is available for somebody who may need help with  
16 their insurance premium?

17 **A.** Yes.

18 **Q.** So, it doesn't -- it doesn't apply until after the  
19 prescription has been written, correct?

20 **A.** Correct.

21 **Q.** And there's no illegitimate purpose in providing a  
22 co-pay card, is there?

23 **A.** No.

24 **Q.** And adherence programs, same sort of thought, adherence  
25 programs that encourage people to take their medicine as

1       prescribed, there's nothing wrong with that, is there?

2       **A.**    No.

3       **Q.**    Let me ask you to look back at Exhibit 42508, please,  
4       Slide 32.

5       **A.**    Yes.

6       **Q.**    And this is a slide I believe you discussed earlier  
7       today where there's a heading, New Ten Free Pills Program.  
8       Do you see that?

9       **A.**    Yes.

10      **Q.**    And I take it this was not, in fact, a giveaway of ten  
11      pills, was it? It was a promotional card that had the  
12      effect of paying for ten pills if a patient had a  
13      prescription?

14      **A.**    That is correct.

15      **Q.**    So, again, this applied after a patient had a  
16      prescription and an assistance card might be available to,  
17      in effect, pay for ten pills?

18      **A.**    Yes.

19      **Q.**    Let me ask you to look at Exhibit 8272, please, and  
20      this is a memo written -- it's an internal memo from Purdue,  
21      right?

22      **A.**    I haven't found it yet.

23      **Q.**    Oh, sorry.

24      **A.**    That's okay.

25      **Q.**    8272. It's the one that's headed National Accounts

1 Memorandum.

2 **A.** Oh, that one? Okay. Let me grab that one. Thank you  
3 for telling me which one it was because I don't know the  
4 numbers by memory, but I know what the other things are.  
5 Yes, the National Accounts Memo.

6 **Q.** So, this is an internal memo written by Purdue,  
7 correct?

8 **A.** Yes, correct.

9 **Q.** And you don't know what Purdue ended up deciding after  
10 it wrote this memo, do you?

11 **A.** Could you re-state the question? I'm sorry. I just  
12 didn't hear it.

13 **Q.** You don't -- you don't know what Purdue ended up  
14 deciding to do after it wrote this memo, do you?

15 **A.** No, I do not.

16 **Q.** And let me ask you to look at the second page of the  
17 document, please. There's a -- Under Obstacles to Our  
18 Growth, the heading there; do you see that?

19 **A.** Yes, I do.

20 **Q.** And the first sentence reads obstacles to our growth  
21 lie predominantly with our reluctance to spend money on  
22 wholesaler programs; do you see that?

23 **A.** Yes.

24 **Q.** And were you aware that Purdue had a reluctance to  
25 spend money on wholesaler programs?

1       **A.**     According to this memo, that's what I read.

2       **Q.**     Yes. Let me ask you to look at Exhibit 42911, please.  
3       This is the focus group memo.

4       **A.**     Yes. Let me grab that.

5       **Q.**     And this memo is more than 20 years old, correct?

6       **A.**     It was in October, 2000.

7       **Q.**     And so, do you know whether there are further memos  
8       that were also reflecting this kind of focus group research  
9       or is this the last one you saw?

10      **A.**     No. There were approximately three documents that I  
11      reviewed that were market research. This one was  
12      qualitative. Others were quantitative.

13      **Q.**     And when you say qualitative, that means based on  
14      interviews of participants?

15      **A.**     Qualitative means that you cannot analyze it  
16      statistically, that it's usually verbal insights that are  
17      given.

18      **Q.**     So, from among the thousands of documents you reviewed,  
19      you saw three dealing with focus groups or research?

20      **A.**     Yes, that I recall.

21      **Q.**     And this involved interviews of 15 doctors; is that  
22      right?

23      **A.**     In this particular study.

24      **Q.**     You don't know whether any of the recommendations in  
25      this document were acted upon, do you?

1     **A.**    Let me just recall the recommendations. I can't draw a  
2     linear cause and effect relationship between this and other  
3     documents, but given that I saw the other documents that did  
4     offer the key opinion leaders and the continuing education  
5     on pain management, there is correlation between those two.

6     **Q.**    But you'd just have to guess as to whether these  
7     recommendations led to those later acts, right?

8     **A.**    Yes, that's correlated.

9     **Q.**    But what you mean by "correlated" is one followed after  
10    the other, correct?

11    **A.**    I can't assert causation. I can't assert that this  
12    caused the continuing education seminars on pain management.

13    **Q.**    Yes. Do you see that in the -- under the conclusions  
14    and recommendations, under Point 5, there's a third sentence  
15    that has a recommendation, educate physicians about  
16    treatment strategies that reduce the risk of narcotic  
17    addiction? Do you see that?

18    **A.**    Yes, I do.

19    **Q.**    And were you aware that that was one of the  
20    recommendations in this document, to reduce the risk of  
21    narcotic addiction by educating doctors?

22    **A.**    Yes. I did read this recommendation previously. The  
23    family physicians were worried about creating addicts and  
24    the final recommendation was the sponsoring of the pain  
25    management conferences and lectures by opinion leaders to,

1 as you're saying, educate them about the attention -- excuse  
2 me -- addiction and tolerance issues.

3 **Q.** And so, part of the recommendation here is educate  
4 doctors on risks of addiction, correct?

5 **A.** That is correct.

6 **Q.** And there's nothing in these recommendations in this  
7 focus group that you view as improper in any way, is there?

8 **A.** I -- I would cautiously agree with that statement.

9 **Q.** And there's certainly no statement in these  
10 recommendations that Purdue engaged in any misleading or  
11 false activity?

12 **A.** The only reason that I'm hesitating is that number 9  
13 statement that says focusing on these issues and OxyContin  
14 marketing material make position that is a safer narcotic  
15 alternative. That just kind of skates a line.

16 **Q.** Well, but that doesn't recommend that there would be  
17 any false or misleading statements, correct?

18 **A.** Correct.

19 MR. HESTER: That's all I have, Dr. Mohr.

20 Your Honor, I did it.

21 THE COURT: You did it. You're -- you're back at  
22 the top of my good graces list.

23 MR. HESTER: Thank you, Your Honor.

24 MR. FARRELL: Objection, Your Honor.

25 MR. HESTER: Thank you, Your Honor.



1 THE WITNESS: Thank you.

2 THE COURT: You're number two now, Mr. Farrell.

3 (Laughter)

4 MS. WICHT: It will take just a moment.

5 THE COURT: You're on the list, too, Ms. Wicht.

6 MS. WICHT: I'm sorry?

7 THE COURT: You're on the good graces list, too.

8 MS. WICHT: Oh, well, thank you very much, Your  
9 Honor. Now I feel a lot of pressure to maintain that during  
10 this examination, but I appreciate the Court's comment.

11 MR. ACKERMAN: Can we get that list in discovery,  
12 Your Honor?

13 MS. WICHT: I have some legal advice for you about  
14 that, Your Honor.

15 **CROSS EXAMINATION**

16 **BY MS. WICHT:**

17 **Q.** Good afternoon, Dr. Mohr.

18 **A.** Hello.

19 **Q.** My name is Jennifer Wicht and I represent Cardinal  
20 Health. You and I have haven't met before, so it's -- I  
21 will say it's nice to meet you --

22 **A.** Thank you.

23 **Q.** Although somewhat in this setting. I am going third in  
24 the line-up here, obviously, and I don't have very many  
25 questions and I'm going to just try to be very targeted

1 because I'm trying not to repeat anything that anyone did  
2 before.

3 **A.** Thank you.

4 **Q.** Okay. So, my first question, Dr. Mohr, is that prior  
5 to being retained as an expert in this opioid litigation you  
6 had never heard of Cardinal Health before, correct?

7 **A.** I frequently scan for case studies to use in my classes  
8 and Harvard Business Review has a section for educators and,  
9 in this particular case, there is a case study that  
10 educators use and it is on one of the distributors. And  
11 because it was about five years ago, I can't recall which  
12 one it was. So, it could have been Cardinal Health, but it  
13 could have been McKesson.

14 **Q.** So, outside of whatever that potential Harvard business  
15 publication was, outside of that, if that was about Cardinal  
16 Health, you'd never heard of Cardinal Health before,  
17 correct?

18 **A.** Correct.

19 **Q.** I'm going to ask you about -- I'm going to sort of jump  
20 into some specifics now and I'm going to ask you about  
21 patient adherence services.

22 **A.** Yes.

23 **Q.** And with respect to Cardinal Health in particular. You  
24 do not know if Cardinal Health has provided patient  
25 adherence -- patient adherence services for opioid

1 medications, correct?

2 **A.** Correct.

3 **Q.** I'm going to jump to field sales support and, Dr. Mohr,  
4 you have not offered any opinion in your testimony here  
5 today or in your report that Cardinal Health provided field  
6 sales support to manufacturers, correct?

7 **A.** Correct.

8 **Q.** Turning to -- back to continuing medical education. Am  
9 I correct that you don't know whether any prescriber or  
10 pharmacist from Cabell County or the City of Huntington  
11 attended any continuing medical education that Cardinal  
12 Health was also involved with, correct?

13 **A.** Correct.

14 **Q.** And that would be true for any of the distributors  
15 here, as well, correct?

16 **A.** Correct.

17 **Q.** And you are not offering any opinion about the  
18 effectiveness of any continuing medical education program in  
19 which any distributor here was involved, correct?

20 **A.** Correct.

21 **Q.** And you're not offering any opinion on whether any such  
22 continuing medical education that a distributor here was  
23 involved with affected demand for opioid medications in any  
24 way, correct?

25 **A.** Correct.

1 Q. I'm going to turn to the subject of return on  
2 investment on market.

3 A. Yes.

4 Q. You have not tried to measure how marketing services by  
5 Cardinal Health generated return on investment for any  
6 opioid manufacturer, correct?

7 A. Correct.

8 Q. Or even if it did generate such a return on investment,  
9 correct?

10 A. Correct.

11 Q. And you don't have any evidence that Cardinal Health's  
12 compensation was tied to increased opioid sales, correct?

13 A. Scanning my brain for the thousands of pages right now,  
14 so just give me a moment.

15 Q. No problem.

16 A. I feel comfortable saying correct to that.

17 Q. Thank you, Dr. Mohr. Okay. I'm going to ask you some  
18 questions that relate to a document that you looked at with  
19 Mr. Ackerman, which is P-43195. It's the Cardinal brochure.  
20 You're certainly welcome to have it in front of you. I'm  
21 not going to ask you questions that stem from the document,  
22 but that's what I'm working from, so I invite you to look at  
23 it.

24 A. Yes, thank you.

25 Q. When you testified earlier with Mr. Ackerman you

1 mentioned a program that's referenced in that document  
2 called First Script, correct?

3 **A.** Yes. Yes.

4 **Q.** Now, you didn't offer any opinions about First Script  
5 in your report in this case, correct?

6 **A.** My understanding of First Script is that it was a  
7 bundled service that included auto ship, service flash and  
8 first facts. And so, I did offer opinions about auto ship,  
9 service flash and first facts. I did not call them First  
10 Script because they were typically broken down because each  
11 of those was a different fee for service and resulted in  
12 different reach to the pharmacists.

13 **Q.** But when you discussed auto ship in your report, Dr.  
14 Mohr, isn't it correct that you did not list the Cardinal  
15 Health auto ship program there?

16 **A.** That is correct.

17 **Q.** And you did not cite in your report a single example of  
18 a First Script shipment going to any pharmacy in  
19 Cabell-Huntington, correct?

20 **A.** Correct.

21 **Q.** And turning now to service flash, you didn't --

22 **A.** Yes.

23 **Q.** I'm sorry. You did not cite in your report or your  
24 testimony today a single example of a service flash message  
25 going to any pharmacy in Cabell County or City of

1       Huntington, correct?

2       **A.**     Correct.

3       **Q.**     And the next one on that list in the brochure that you  
4       talked about this morning is called First Facts. And you  
5       didn't offer any opinions about First Facts in your expert  
6       report in this case, correct?

7       **A.**     Are you asking in general or are you asking with  
8       respect to Cabell County and Huntington?

9       **Q.**     I'm asking in general with respect to Cardinal Health?

10      **A.**     Correct.

11      **Q.**     Okay.

12               MR. WICHT: May I take a moment, Your Honor?

13               THE COURT: Yes.

14               (Pause)

15               MR. WICHT: That's all I have. And I think I  
16       succeeded in maintaining my position, if I may be so bold.

17               Thank you very much, Dr. Mohr.

18               THE COURT: I'm sorry.

19               Mr. Ackerman?

20               MR. ACKERMAN: Give me one moment, Your Honor, but  
21       I think I may jump ahead of Mr. Hester on your list.

22               (Pause)

23               MR. ACKERMAN: I'm only walking up here to say  
24       that I have no questions.

25               And thank you, Dr. Mohr, for your time.

1 THE WITNESS: Thank you.

2 THE COURT: May Dr. Mohr be excused?

3 MS. MCCLURE: Yes, Your Honor.

4 MR. HESTER: Yes, Your Honor. Thank you.

5 MS. WICHT: Yes.

6 MR. ACKERMAN: Yes.

7 THE COURT: Dr. Mohr, we made it with many hours  
8 to spare. So, you're free to go and we thank you for coming  
9 all the way from Montana to help us out here and you're  
10 excused.

11 THE WITNESS: Thank you very much.

12 MR. ACKERMAN: Yeah. Leave the documents there.

13 THE WITNESS: I can leave them here?

14 MR. ACKERMAN: Yes.

15 THE WITNESS: Okay.

16 MR. ACKERMAN: We just need a minute, Your Honor,  
17 to shuffle the decks.

18 THE COURT: Okay.

19 MR. FARRELL: Are we ready?

20 Your Honor, the plaintiffs have the privilege of  
21 calling Dr. Katherine Keyes, K-e-y-e-s.

22 THE COURT: Okay.

23 COURTROOM DEPUTY CLERK: Would you please state  
24 your name?

25 THE WITNESS: Katherine Keyes.

1 COURTROOM DEPUTY CLERK: Thank you. Please raise  
2 your right hand.

3 **DR. KATHERINE KEYES, PLAINTIFF WITNESS, SWORN**

4 COURTROOM DEPUTY CLERK: Thank you. Please take a  
5 seat.

6 THE COURT: Good afternoon, Dr. Keyes.

7 THE WITNESS: Good afternoon.

8 **DIRECT EXAMINATION**

9 **MR. FARRELL:**

10 **Q.** Will you please state your name for the record?

11 **A.** My name is Katherine Keyes.

12 **Q.** Dr. Keyes, what is your profession?

13 **A.** I'm an epidemiologist.

14 **Q.** And so, we had the pleasure of an epidemiologist  
15 yesterday by the name of Dr. Smith. Do you know Dr. Smith?

16 **A.** I'm sorry?

17 **Q.** Dr. Smith, do you know Dr. Smith?

18 **A.** I do.

19 **Q.** And just to give the Court some brief context, can we  
20 bring up Demo 235, Page 6? Do I need to push a button? Is  
21 it on my end?

22 I'll see if I can do it like this in the meantime.  
23 Does that work? Oh, there we go.

24 Dr. Keyes, do you recognize figure 9 from your report?

25 **A.** I do.



1 Q. And is this a data visualization of the data provided  
2 by Dr. Smith in this case?

3 A. Yes.

4 Q. And is it your understanding today you will be building  
5 upon that?

6 A. I will.

7 Q. Very good. So, we'll bypass some of the preliminaries  
8 that we went through with Dr. Smith, but I do want to start  
9 with your definition of epidemiology. Would you please give  
10 the Court the definition that you use?

11 A. Yeah. It is the science of studying causes and  
12 distributions of health outcomes in populations.

13 Q. And how do epidemiologists go about understanding  
14 causes and distributions of public health?

15 A. We collect data on the health and populations and we  
16 try to assess what risk factors are causing those health  
17 problems. So, it's both data collection, data analysis, and  
18 then synthesizing our results with the existing scientific  
19 literature to come to consensus on causation.

20 Q. What qualifications do you need to be an  
21 epidemiologist?

22 A. Typically, you need advanced training in the principles  
23 and methods of epidemiology through a graduate degree.

24 Q. And are there professional organizations?

25 A. Yes.

1 Q. And can you tell the judge which professional  
2 organizations exist?

3 A. The main one in North America is the Society for  
4 Epidemiological Research.

5 Q. And are there peer-review journals?

6 A. Yes.

7 Q. And can you name to the judge a couple of the  
8 peer-review journals that epidemiologists in your field  
9 consider to be authoritative?

10 A. There's the *American Journal of Epidemiology*. There's  
11 a journal called *Epidemiology*. There is the *International*  
12 *Journal of Epidemiology*. There's *Annals of Epidemiology*.  
13 And others.

14 Q. All right. Do epidemiologists in your field rely on  
15 these journals when performing their analyses?

16 A. Yes.

17 Q. And in addition to being -- having published  
18 peer-review journals on epidemiology, do epidemiologists  
19 also seek to get published in other journals in other fields  
20 of medicine?

21 A. Yes. Epidemiology is really a set of methods. And so,  
22 within epidemiology, you have people who focus on different  
23 substantive areas. And so, I'm a substance abuse  
24 epidemiologist. So, I publish in substance abuse journals  
25 and epidemiology journals.

1       **Q.** In addition to the academic world do epidemiologists  
2 work with and provide input for national health  
3 organizations?

4       **A.** Yes.

5       **Q.** Can you tell the judge briefly about the role of  
6 epidemiology in some of our national health organizations?

7       **A.** Yes. There's a lot of epidemiologists who work at the  
8 Centers for Disease Control and Prevention, the CDC, the  
9 NIH. A lot of those epidemiologists will work internally,  
10 you know, understanding health outcomes through their work  
11 in the governmental organizations. But then those  
12 organizations also fund externally epidemiologists like me.

13       **Q.** Now, I'm going to endear myself to the court reporter  
14 and remind you to slow down.

15       **A.** Okay.

16       **Q.** Especially when we get to some of the bigger words.  
17 You mentioned NIH. Can you tell the Court what is NIH and  
18 what, if any, is your relationship with NIH?

19       **A.** NIH is the National Institute of Health and there are a  
20 number of institutes within the NIH. And those institutes  
21 fund research extramurally. So, by that, it means outside  
22 of the NIH. So, they fund universities like mine to the  
23 researchers within them to conduct research. And I'm  
24 currently funded by the National Institute of Drug Abuse,  
25 National Institute of Alcohol Abuse and Alcoholism and The

1 National Institute of Mental Health.

2 **Q.** And are those all within the purview of the National  
3 Institute of Health?

4 **A.** They are.

5 **Q.** All right. We heard earlier from Dr. Smith that  
6 epidemiologists specialize. Do you have a specialty?

7 **A.** Yes.

8 **Q.** And what is your specialty?

9 **A.** Opioid use, Opioid Use Disorder, and related  
10 comorbidities.

11 **Q.** Dr. Keyes, what do you believe to be your role today in  
12 court?

13 **A.** I believe my role is to tell the Court about the report  
14 that I wrote that details the extent of Opioid Use Disorder  
15 and related harms in the Cabell-Huntington community and  
16 address factors that led to -- the causal factors that led  
17 to harms in the Cabell-Huntington community.

18 **Q.** And how did you first become involved in this  
19 litigation?

20 **A.** I got an e-mail from Mr. Farrell, who had read an  
21 article of mine in the American Journal of Public Health and  
22 had some questions about the article and wanted me to help  
23 interpret some county overdose data.

24 **Q.** Do you remember or recall which article that was?

25 **A.** It was an article in the American Journal of Public

1 Health about urban and rural differences in prescription  
2 opioid misuse and overdose.

3 **Q.** Dr. Keyes, have you ever testified in court at a trial  
4 before?

5 **A.** No.

6 **Q.** You have been in court, though, before?

7 **A.** Yes.

8 **Q.** Can you tell the judge about your previous experiences  
9 with being involved in civil litigation, especially in the  
10 opioid litigation?

11 **A.** Yes. I testified in a Frye hearing in New York.

12 **Q.** And do you know the results of that?

13 **A.** I -- I think I passed. I haven't heard any different.

14 **Q.** All right. So, you understand that today is a little  
15 bit different, that instead of just talking about your  
16 qualifications, we're going to get into detail on direct  
17 with your findings and then cross examination from the  
18 defendants. Have you been deposed before?

19 **A.** Yes.

20 **Q.** In this case?

21 **A.** Yes.

22 **Q.** How many times have you been deposed on your opinions  
23 related to opioid abuse?

24 **A.** I believe four or five. Four.

25 **Q.** Who else has disclosed you as an expert in the opioid

1 litigation? Not -- not consulted with you, but formally  
2 disclosed you as an expert?

3 **A.** I have -- I have been disclosed, I believe, in the  
4 various MDL tracks, the case Track 1, 2 and 3, as well as  
5 involved in the New York State litigation.

6 **Q.** And I understand they're picking a jury as we speak.

7 **A.** I'm -- I'm not familiar with their -- with what they're  
8 doing.

9 **Q.** All right. We're going to turn now to qualifications  
10 and, with the Court's indulgence, I am going to spend a  
11 little bit of time with this aspect. So, I would like for  
12 you to first start and tell the Court about your educational  
13 background.

14 **A.** Sure. I received a Masters degree in Epidemiology from  
15 Columbia University. I stayed at Columbia to do my doctoral  
16 training and I received my Ph.D. in 2010. I then did a  
17 postdoctoral fellowship at Columbia for several years. And  
18 then I started on faculty as a tenure track assistant  
19 professor in 2012.

20 **Q.** And have you -- I don't know the right wording for  
21 this. Are you a tenured professor at Columbia?

22 **A.** Yes. I received tenure and my title is Associate  
23 Professor of Epidemiology.

24 **Q.** So, these are academic positions at Columbia University  
25 and I've seen in the title the Mailman School of Public

1 Health. Can you describe for the judge what that is?

2 **A.** Yes. The Mailman School of Public Health is the public  
3 health school at Columbia University.

4 **Q.** And do you also hold teaching positions?

5 **A.** I do.

6 **Q.** What and where have you taught?

7 **A.** I teach graduate courses at Columbia in the School of  
8 Public Health and I have also taught at various  
9 universities. I teach at the University of Michigan in Ann  
10 Arbor. I've taught at the University of Cape Town in South  
11 Africa. And other various short courses at universities in  
12 other locations.

13 **Q.** Do you teach undergraduate classes?

14 **A.** No.

15 **Q.** What do you primarily -- or what students do you  
16 primarily teach?

17 **A.** I primarily teach Masters and doctoral-level graduate  
18 students.

19 **Q.** Do you know how many Masters students you've taught  
20 approximately?

21 **A.** Thousands.

22 **Q.** What about doctoral students? Have you -- how many  
23 doctoral students have you taught?

24 **A.** My primary role of doctoral students is mentoring them  
25 and I've mentored approximately 30 to 40 doctoral students.

1       **Q.**    Have some of the doctoral students that you've  
2       mentored, have they gone on to academic placements at  
3       universities in America?

4       **A.**    Yes.

5       **Q.**    Can you tell the judge briefly a couple of the  
6       universities your doctoral students are now teaching at?

7       **A.**    My doctoral students have gone throughout the world  
8       really.  Most recently, UCLA, Harvard, University of Iowa  
9       and other places in the U. S.

10      **Q.**    Now, publications, are you published, Dr. Keyes?

11      **A.**    Yes.

12      **Q.**    How many peer-reviewed articles have you had published?

13      **A.**    I believe the last count was 306.

14      **Q.**    And so, I don't know what this means.  Well, I do  
15      because I asked you the other day, but 70 of those articles  
16      are first authored.  Can you tell the judge what first  
17      authored means?

18      **A.**    That means I took primary responsibility for the  
19      conception of the study, the data analysis and the writing  
20      of the manuscript.

21      **Q.**    And will you tell the judge a couple of the journals  
22      that your articles have been published in?

23      **A.**    Various publications.  JAMA Psychiatry.  All the  
24      epidemiology journals I mentioned earlier my work has been  
25      published in.  Major medical journals.  Pediatrics.  The



1 British Medical Journal and other major substantive journals  
2 in my field.

3 **Q.** I'm afraid I'm not going to let you get off that easy.  
4 Have you been published in the American Journal of  
5 Psychiatry?

6 **A.** Yes.

7 **Q.** And the American Journal of Epidemiology?

8 **A.** Yes.

9 **Q.** Pediatrics?

10 **A.** Yes.

11 **Q.** JAMA Psychiatry?

12 **A.** Yes.

13 **Q.** And JAMA stands for?

14 **A.** Journal of the American Medical Association.

15 **Q.** And then, Lancet Psychiatry, what is Lancet Psychiatry?

16 **A.** That's another major international publication, journal  
17 publication.

18 **Q.** Now, I'm going to also have you explain what an h-index  
19 means to the Court.

20 **A.** An h-index is a measure of how many times your work is  
21 being cited by others. And so, it's a measure of sort of  
22 the influence you have as a scientist in the world.

23 **Q.** And what is your current h-index?

24 **A.** I believe it's about 75.

25 **Q.** I also understand that from the Web of Science in 2019

1 you were noted as a, quote-unquote, "highly cited  
2 researcher". Will you explain to the Court what that means?

3 **A.** That means that I'm in the top one percent of all  
4 scientists in terms of the people who are studying my work  
5 in the world.

6 **Q.** Now, you also are principal investigator in studies; is  
7 that correct?

8 **A.** Yes.

9 **Q.** And will you tell the judge about your role as a  
10 principal investigator with a particular project from the  
11 National Institute of Health?

12 **A.** I currently have three projects that I'm the principal  
13 investigator on that are funded by the National Institute of  
14 Health. One is tracking trends over time in adolescent  
15 substance use and seeing how those trends correspond to  
16 trends in adolescent mental health to try to understand the  
17 causative factors of why trends -- why the trends over time  
18 are occurring and their correlation with mental health  
19 problems.

20 **Q.** And so, what is the funding for that project?

21 **A.** That comes from the National Institute on Drug Abuse.

22 **Q.** And do you know how much it is?

23 **A.** I don't off the top of my head.

24 **Q.** Also, Columbia University in 2019, you're involved with  
25 PHIOS, P-H-I-O-S. Can you explain to the Court what that

1 is?

2 **A.** Yes. That is a center at Columbia that is focused on  
3 opioid policy and understanding how opioid policy and other  
4 factors related to the overdose epidemic are influencing the  
5 health populations.

6 **Q.** And that's the Policy and Health Initiatives on Opioids  
7 and Other Substances, correct?

8 **A.** That's right.

9 **Q.** And what is your role with this group?

10 **A.** I'm on their faculty.

11 **Q.** Now, you're also involved with SAETP. I don't know how  
12 to say that or if you're supposed to say it. SAEPT?

13 **A.** SAEPT.

14 **Q.** That's a Substance Abuse Epidemiology Training Program  
15 at Columbia University. Will you explain to the Court what  
16 that is?

17 **A.** We recruit and train doctoral students and postdoctoral  
18 fellows in substance abuse epidemiology, our methods, and  
19 get them involved in research in our -- in our field.

20 **Q.** And you're also involved with HEALing Community Studies  
21 and HEALing is capital H, capital E, capital A, Capital L,  
22 -ing. Will you tell the Court about your involvement with  
23 this study

24 **A.** Yes. It stands for Helping and Addiction Long-Term and  
25 it is a suite of studies that are funded by NIDA, National

1 Institute on Drug Abuse. And I'm involved with the Healing  
2 Community Study, HCS, which is a -- a large implementation  
3 science initiative where four states have received funding  
4 and universities in those states have received funding to  
5 work with communities.

6 We work with people with lived experience with drug  
7 addiction, treatment providers, law enforcement, everyone in  
8 the community who is a stakeholder in developing programs to  
9 reduce overdose.

10 We work with those communities to try to see what their  
11 needs are and see how we can design and implement overdose  
12 prevention initiatives that meet the needs of the community.

13 **Q.** And how much is that funding?

14 **A.** The HCS funding is upwards of \$300 million, I believe.

15 **Q.** And that's from NIH?

16 **A.** Yes.

17 **Q.** And do you have sufficient funding for your project?

18 **A.** Absolutely not.

19 **Q.** What about your peer-reviewed articles that are related  
20 specifically to opioid use and related harms? How many  
21 times have you been published in that area?

22 **A.** I believe between 35 and 40.

23 **Q.** And is this a well-developed scientific area in  
24 epidemiology in your opinion?

25 **A.** Yes.

1 Q. And have you also written textbooks?

2 A. Yes.

3 Q. How many textbooks have you written?

4 A. Two.

5 Q. And who published them?

6 A. Oxford University Press.

7 Q. And what is the name of the first textbook?

8 A. *Epidemiology Matters: A New Introduction to*  
9 *Methodological Foundations.*

10 Q. And is it being used by universities currently?

11 A. It is.

12 Q. It is, in fact, being used at Columbia?

13 A. Yes.

14 Q. Tell the judge why you wrote that textbook.

15 A. I taught epidemiological methods to graduate students  
16 for years and, you know, the textbooks that we were using I  
17 felt didn't sufficiently present the material in a way that  
18 was the best way to engage students and help them learn the  
19 foundations of our methods. And so, I wrote a textbook  
20 based on my teaching experience.

21 Q. And have you kept track of which universities are using  
22 it?

23 A. I haven't kept specific track. I receive e-mails  
24 sometimes from people who ask questions and want additional  
25 material. And I also created a set of lecture sites for

1 every chapter. I created exercises for every chapter that  
2 students can use. So, faculty will reach out to me to get  
3 those materials.

4 **Q.** Okay. The second textbook, *Population Health Science*,  
5 can you tell the judge about the second textbook you wrote?

6 **A.** Yes. When I finished writing *Epidemiology Matters*, I  
7 realized that I had a lot more to say about the way we  
8 conduct health science research and that I really --  
9 *Epidemiology Matters* was really focused on the nuts and  
10 bolts of how to design and interpret epidemiological  
11 evidence and I realized I wanted to say more about really  
12 the philosophical foundations of our field and how to really  
13 think about the health of populations. And so, I wrote a  
14 second book that's a much broader view of different  
15 conceptual frameworks that you can use to try to understand  
16 why communities get sick and how you study that.

17 **Q.** And do you serve as a journal reviewer?

18 **A.** I do.

19 **Q.** And which journals have you served in that capacity?

20 **A.** Many. Should I --

21 **Q.** Tell the judge a couple of the ones that have the  
22 heftier weight.

23 **A.** Sure. New England Journal of Medicine. All of the  
24 JAMA journals. Lancet. All of the major medical journals  
25 that we mentioned earlier. I also serve as a peer-reviewer

1 for those journals.

2 **Q.** Do you also serve on editorial boards for peer-review  
3 journals?

4 **A.** Yes.

5 **Q.** Which ones?

6 **A.** I am an Associate Editor of the journal Drug and  
7 Alcohol Dependence and I'm a Field Editor of the journal  
8 Alcoholism: Clinical and Experimental Research.

9 **Q.** And have you served as an invited lecturer in your  
10 professional career?

11 **A.** Yes.

12 **Q.** And can you tell the judge briefly about your invited  
13 lectures?

14 **A.** Yes. I have been invited to give lectures in many  
15 universities in the United States and throughout the world.  
16 All the major medical -- major schools of public health have  
17 invited me to present my work.

18 **Q.** What about your professional affiliations? Which of  
19 the professional organizations do you belong to?

20 **A.** I belong to the Society for Epidemiological Research.  
21 Also, the College on Problems of Drug Dependence and the  
22 Research Society on Alcoholism and other various  
23 professional societies that are related to either  
24 epidemiological methods or substance abuse research.

25 **Q.** And you recently are the recipient of an award, are you

1 not?

2 **A.** Yes.

3 **Q.** And will you tell the judge what you were awarded?

4 **A.** The Society for Epidemiological Research last year  
5 awarded me with the Mid-Career Award, which is the award for  
6 the most distinguished society member in the middle of their  
7 career.

8 MR. FARRELL: Judge Faber, at this time, we would  
9 ask the Court to recognize Dr. Keyes as an expert in the  
10 field of epidemiology specializing in opioid use, Opioid Use  
11 Disorder, and related harms.

12 THE COURT: Is there any objection?

13 MR. HESTER: No objection, Your Honor.

14 MS. HARDIN: No objection.

15 MR. NICHOLAS: No objection.

16 THE COURT: I find that Dr. Keyes is an expert in  
17 the field of epidemiology, specializing in opioid use,  
18 Opioid Use Disorder, and related harms.

19 That got it, didn't it, Mr. Farrell?

20 MR. FARRELL: Yes, Your Honor.

21 And now you can add this to your distinguished  
22 curriculum vitae.

23 THE WITNESS: I will.

24 BY MR. FARRELL:

25 **Q.** The next category I want to talk about before we jump



1 into the substance is methodology. Help me and help the  
2 Court understand when an epidemiologist goes about to do  
3 their job what is the methodology that you employ that is --  
4 and I don't mean you. I mean the field of epidemiology, is  
5 there a standard methodology that you use in your practice?

6 **A.** Yes.

7 **Q.** And, in fact, do you teach this methodology in graduate  
8 schools?

9 **A.** I do.

10 **Q.** And so, will you tell the judge briefly and broadly.  
11 Because we're going to apply that later. The methodology  
12 that epidemiologists employ?

13 **A.** Yes. We conduct data analysis and apply statistical  
14 and epidemiological methods to try to uncover patterns in  
15 the data associations. And then we look at the broad range  
16 of literature that's available and apply well-developed and  
17 standard sets of factors to the broader range of literature  
18 to try to determine if those associations are causal.

19 **Q.** So, that's what you told me before. I'm going to try  
20 to unpack that a little bit. So, is it fair to say that  
21 what epidemiologists do is you identify exposures?

22 **A.** Yes.

23 **Q.** And then you try to determine causal associations with  
24 related harms?

25 **A.** That's right.

1       **Q.**    So, there's a lot to unpack in that particular thing.  
2       Let's talk for a second about the difference between an  
3       association and something -- and an association that is  
4       causal. Is there a difference between those two words?

5       **A.**    Yes. In any epidemiological study, including  
6       randomized controlled trials, what you estimate are  
7       associations. And then you try to figure out which of those  
8       associations are causal and which of them reflect two  
9       factors that are just correlated, that there's no actual  
10      causal association.

11      **Q.**    So, let's dig a little bit deeper on that. If you have  
12      five studies of five cohorts, or five separate populations,  
13      is it possible that each of those five studies may identify  
14      an association, but it doesn't reach to the level of causal?

15      **A.**    Any study alone, it's difficult to reach a causal  
16      conclusion just based on one study. You really need to look  
17      at a broader range of literature.

18      **Q.**    And so, in order to get to -- from an association to  
19      causal, what do -- what factors do epidemiologists use to  
20      reach that analysis?

21      **A.**    Sure. We look for things like is there a consistent  
22      relationship? Is this relationship observed in different  
23      populations, observed in different times with independent  
24      researchers? So, that's a really major one for us.

25             We also look for things like dose response. If there's

1 more -- as the exposure gets higher, do you see more of the  
2 outcome? We look for the strength of the association. We  
3 want to make sure that there's a biologically plausible  
4 reason why the exposure should be related to the outcome  
5 based on what we know about biology and sociology.

6 So, those are the types of factors we look at. We also  
7 look at have you ruled out alternative explanations? You  
8 know, what are the alternative explanations for this  
9 association? And is there actual evidence that would rule  
10 out the alternative to a causal explanation?

11 **Q.** Okay. And do you teach these factors to your students?

12 **A.** Every first year Masters student.

13 **Q.** And is there a common framework in which you teach  
14 these factors to students?

15 **A.** A lot of times we use Bradford Hill's classic paper as  
16 the kind of framework for walking through those types of  
17 criteria.

18 **Q.** Who is Bradford Hill?

19 **A.** Bradford Hill was an epidemiologist and medical  
20 statistician who really did some of the foundational work in  
21 establishing that smoking was a cause of lung cancer in the  
22 1950s and 1960s. He really pioneered a lot of  
23 epidemiological methods that established that association.

24 And the methods that we would use to separate -- you  
25 know, some people said smoking is just correlated with lung

1 cancer and he developed these factors that allowed us to  
2 come to a causal conclusion, that it was indeed a causal  
3 factor.

4 **Q.** Okay. Now, let's talk briefly about your references  
5 and reliance materials. Have we asked you to use your  
6 skills as an epidemiologist to analyze and draw causal  
7 associations between opioid exposure and opioid-related  
8 harms in Huntington-Cabell County, West Virginia?

9 **A.** Yes.

10 **Q.** And the things that you relied upon, can you give the  
11 Court a listing in numerical order of your reference  
12 materials?

13 **A.** Not by memory.

14 **Q.** They're extensive, are they not?

15 **A.** They are.

16 **Q.** And you have also published a report, have you not?

17 **A.** Yes.

18 **Q.** And the report, quite frankly, is rather extensive. I  
19 think my colleagues would agree that it's dense.

20 **A.** Yes.

21 **Q.** It's a dense document.

22 MR. FARRELL: Judge, what I would ask to do is, I  
23 would ask to distribute a copy of the report, the reliance  
24 materials and references. I don't intend to admit them in  
25 the record, but I would suggest that having reliance on this

1 so that the Court, the witness, and the parties can see the  
2 numbers and the data may be of assistance and an efficient  
3 way to elicit testimony.

4 So, with your permission, may I approach and  
5 distribute?

6 THE COURT: Is there any objection to that?

7 MR. HESTER: Your Honor, I don't have any  
8 objection to providing it to the witness or to the parties.  
9 I don't think it should go to the Court, is my  
10 understanding, but unless --

11 THE COURT: Does everybody agree with that?

12 MS. MCCLURE: I join.

13 MS. HARDIN: Yes, Your Honor.

14 THE COURT: All right. Well, I guess everybody  
15 gets it but me, Mr. Farrell.

16 MR. FARRELL: This means I've got extra copies for  
17 people.

18 May I approach?

19 THE COURT: Yes.

20 BY MR. FARRELL:

21 **Q.** Okay. So, for purposes of creating a record, Exhibit  
22 B-1 is your reference materials and can you flip to that and  
23 tell the Court how many pages of reference materials you  
24 have listed of literature?

25 **A.** And this is what page?

1 Q. It's Exhibit B-1. And the answer may or may not be 48  
2 pages.

3 A. B-1.

4 Q. Yes, Exhibit B-1.

5 A. It is 48 pages.

6 Q. Yes. And there are 840 separate line items, are there  
7 not, in your reliance materials?

8 A. Yes.

9 Q. Okay. So, with ten minutes before the first  
10 anticipated break, I think -- no? We're going to jump right  
11 into a -- we're going to jump right into it with the gateway  
12 effect.

13 THE COURT: I think 40 minutes before the first  
14 break, Mr. Farrell.

15 MR. FARRELL: 40 minutes and yes, Your Honor.

16 BY MR. FARRELL:

17 Q. We're going to jump right into the first topic. I'm  
18 just going to jump right in. You're familiar with the OIG  
19 Report from 2019?

20 A. Yes.

21 Q. The Office of the Inspector General. And I'm not going  
22 to have you talk about anything except for Page 1. All  
23 right? And I'm going to use this as a vehicle for us to  
24 talk about our favorite topic, which is the gateway effect.  
25 You have, in fact --

1 MR. HESTER: Your Honor, may I object? I'm not  
2 aware that this witness listed the OIG Report in her  
3 reliance materials.

4 THE COURT: Did she or did she not?

5 MR. FARRELL: I don't know, Judge. This is  
6 entered into evidence and I'm simply going to ask her if  
7 there's an epidemiological basis in support for the  
8 reference point in the OIG entered into this case.

9 MR. HESTER: I think --

10 THE COURT: Well, if she used it as one of the  
11 materials she relied on, can't she talk about it?

12 MR. HESTER: She did not.

13 THE COURT: She did not?

14 MR. HESTER: Did not. It's not listed in her  
15 reliance materials, Your Honor, and I do not believe she  
16 offered any opinion related to this OIG Report.

17 MR. FARRELL: Judge, I'm not asking if she's  
18 relied upon it. I'm going to ask her whether she agrees  
19 with it.

20 MR. HESTER: Well, Your Honor, it seems to me that  
21 goes beyond the scope of her expert opinions if it's not  
22 been disclosed to us that she was going to offer an opinion  
23 on this OIG Report. This is the first time we've heard of  
24 this.

25 MR. FARRELL: I'm simply trying -- let me see if I

1 can back up and lay a better basis.

2 BY MR. FARRELL:

3 **Q.** Dr. Keyes, do you intend to -- or do you have an  
4 opinion whether exposure to prescription opioids has a  
5 causal association with the initiation of heroin?

6 **A.** Yes.

7 MR. HESTER: Object as vague, Your Honor.

8 THE COURT: I'll overrule that objection, but what  
9 about the reference to the OIG Report or whatever that is?

10 MR. FARRELL: I was really just trying to cite it  
11 because it says exactly what she says and it cites the same  
12 thing she cites. So, I was trying to use the defendants'  
13 exhibit to bolster my witness's testimony.

14 MS. HARDIN: Objection, Your Honor. That's  
15 improper. That's improper corroboration of his own expert.  
16 His expert is here. He can ask his expert what his expert  
17 thinks, but he doesn't corroborate with a separate document.

18 THE COURT: Yes. Mr. Farrell, you'll have to get  
19 at it some other way.

20 MR. FARRELL: Okay. All right.

21 BY MR. FARRELL:

22 **Q.** So, in your analysis have you relied upon the medical  
23 literature to support your opinion as to a causal  
24 association between prescription opioids and heroin?

25 **A.** Yes.



1 Q. And, in fact, do you believe that there is a causal  
2 connection between prescription opioids and heroin?

3 A. Yes.

4 Q. Do you believe it is factually established in the  
5 medical literature?

6 A. Yes.

7 Q. So, if you were to tell the Court and name some of the  
8 most prominent articles that establish this, which would be  
9 the first of your choosing?

10 A. I would point to a consensus statement perhaps by the  
11 Association for Schools of Public Health, which is an  
12 organization of more than a hundred schools of public health  
13 across the country.

14 Q. Okay. So, let's start with that. Let's say it again  
15 slower this time. This is -- what is -- this is a  
16 professional organization?

17 A. Yes.

18 Q. And what is the name of it?

19 A. The Association For Schools of -- there's another P.  
20 It's Public Health and another P.

21 Q. Well, I'm not going to have you guess.

22 MR. FARRELL: Judge, I also have several pages of  
23 a demonstrative that I previously provided to the defendants  
24 and, with your permission, I'd provide you a copy and  
25 publish to the witness.

1 BY MR. FARRELL:

2 Q. For reference point, we're going to be looking at Page  
3 11. So, it's the Association of Schools and Programs in  
4 Public Health?

5 A. Programs. That was the P I was missing.

6 Q. Or ASPPH2019. Will you tell the Court what this  
7 association is?

8 A. This is an Association of Schools of Public Health  
9 across the country. There's more than 100 schools of public  
10 health that are a part of it, including West Virginia  
11 University and Columbia University.

12 Q. Okay. What about -- what other prominent schools of  
13 public health are members, Johns Hopkins?

14 A. Yes.

15 Q. Harvard? Yale?

16 A. I believe so.

17 Q. Stanford?

18 A. I don't have them all memorized, so I don't want to --  
19 I don't want to have -- say anything that's potentially  
20 incorrect, but there's a lot of schools that are involved.

21 Q. Okay. And so, what is the consensus statement from the  
22 Association of Schools and Programs in Public Health?

23 A. I think this quote that is on the demonstrative is a  
24 good summary of the consensus of epidemiologists on this  
25 topic.

1 MR. FARRELL: With the Court's permission, I would  
2 like her to read it into the record.

3 THE COURT: You may do so.

4 Is there any objection?

5 MR. HESTER: No objection, Your Honor.

6 THE COURT: All right. You may do so, Dr. Keyes.

7 THE WITNESS: Sure. The tremendous expansion of  
8 the supply of powerful high potency, as well as long-acting  
9 prescription opioids led to scaled increases in prescription  
10 opioid dependence, and the transition of many to illicit  
11 opioids, including fentanyl and its analogs which have  
12 subsequently driven exponential increases in overdose.

13 And there's a second statement. Opioid Use Disorder is  
14 caused by repeated exposure to opioids.

15 BY MR. FARRELL:

16 **Q.** So, Dr. Keyes, do you concur that this is a consensus  
17 statement from all of the schools that belong to the  
18 Association of Schools and Programs in Public Health?

19 **A.** Yes.

20 **Q.** In your opinion, is this statement a fact?

21 MR. HESTER: Object to the form.

22 THE COURT: Sustained. You can rephrase it, Mr.  
23 Farrell.

24 BY MR. FARRELL:

25 **Q.** Do you believe this statement is true?

1     **A.**    I believe that the evidence in the medical literature  
2     is -- overwhelmingly supports the validity of this  
3     statement.

4     **Q.**    Now, one of those pieces of literature is an article  
5     that you cite repeatedly called Cicero. Are you familiar  
6     with the Cicero study?

7     **A.**    I am.

8     **Q.**    And will you tell the judge what is the Cicero study?

9     **A.**    Cicero colleagues collecting data on a large number of  
10    individuals who are in treatment for drug use disorders and  
11    interviewed them extensively using well-validated  
12    instruments on their histories of various drugs.

13    **Q.**    And you're going to have to forgive me here, but I  
14    don't know that I can read this small. But the Cicero  
15    opinion -- or article, where was it published?

16    **A.**    JAMA Psychiatry.

17    **Q.**    And that's JAMA, Journal of American Medical  
18    Association?

19    **A.**    That's right.

20    **Q.**    Now, in the Cicero article there is a data graph that  
21    you reference. Would it be helpful for you to see the data  
22    graph and show the judge the findings in Cicero?

23    **A.**    Yes.

24                   MR. FARRELL: And, Judge, with your permission, I  
25    would like to show Demo Exhibit 12.

1 THE COURT: You may do so.

2 BY MR. FARRELL:

3 **Q.** So, this is, for the record, Figure 1 from the Cicero  
4 article and Figure 1 is the -- the title of it is Percentage  
5 of the Total Heroin Dependent Sample That Used Heroin Or a  
6 Prescription Opioid As Their First Opioid of Abuse. And  
7 will you explain to the judge what this table demonstrates  
8 and why it supports your conclusion that there is a causal  
9 association between prescription opioids and heroin?

10 **A.** Yes. So, on the x-Axis, which is the horizontal axis,  
11 the authors separated the respondents by the decade in which  
12 they first used opioids and then interviewed them about the  
13 sequence with which they used opioids.

14 And you can see that in -- for people who started  
15 using drugs in the 1960s, and in the 1970s, and in the  
16 1980s, the square, heroin, is much higher than the circle,  
17 prescription opioid.

18 So, many more people started with heroin as their first  
19 opioid in the 60s, 70s and 80s. Once you crossed in the  
20 1990s and 2000s, you can see the line flips and now the  
21 circle's on top and the square's on bottom, which indicates  
22 that, as of the 2000s, many more people who ended up using  
23 heroin started with a prescription opioid before they used  
24 heroin.

25 THE COURT: These are all heroin dependent

1 individuals?

2 THE WITNESS: Yes.

3 THE COURT: So, the whole study?

4 THE WITNESS: For this analysis, yes, they're all  
5 heroin dependent.

6 BY MR. FARRELL:

7 Q. And is the Cicero study relied upon and viewed as  
8 reliable in the field of epidemiology?

9 A. Yes.

10 Q. Have you seen any literature which brings to -- or  
11 substantially challenges the validity of the Cicero study?

12 A. No. And, in fact, there are many other studies. The  
13 Cicero study is, you know, one of the largest and, you know,  
14 goes back the furthest, but there are many studies that I  
15 cite in the report that find that 70-80 percent of people  
16 who end up using heroin begin with prescription opioids and  
17 that that started in the 2000s.

18 Q. And, in fact, that's the exact statistic cited often by  
19 the National Institute of Health, is it not?

20 A. It is. It's on the National Institute of Drug Abuse  
21 website.

22 Q. Now, in addition to that, the New England Journal of  
23 Medicine has a review article written by Compton. Are you  
24 familiar with that article?

25 A. I am.

1 MR. FARRELL: Now, this article is a little more  
2 detailed. And so, I'd like to, with the Court's permission,  
3 provide a copy to counsel, the witness, and to the Court  
4 unless there's an objection.

5 MR. HESTER: Well, the only objection is that the  
6 protocol among the parties is that we would exchange lists  
7 of exhibits to be used with witnesses at least a day in  
8 advance and we were not provided with any exhibits to be  
9 used with Dr. Keyes.

10 MR. FARRELL: I'm not publishing any of this.  
11 This is -- I'm just going to ask her questions. I was just  
12 being courteous. I can do so without it.

13 MR. HESTER: Well, it seems to me, Your Honor, the  
14 spirit of the protocol is that if Mr. Farrell is going to be  
15 using articles with the witness, we would have had a chance  
16 to know in advance which articles those would be so we'd  
17 have some opportunity to prepare.

18 THE COURT: Yeah. Aren't they entitled of notice  
19 of what you're going to use because it would be a  
20 fundamental element in the preparation of the cross  
21 examination, I would think, potentially.

22 MR. FARRELL: I don't know that I disagree with  
23 any of that, Judge. I don't know that -- this witness has  
24 been deposed four times. This is in her report. This is  
25 not undiscovered territory that she's going to say the

1 gateway effect is supported by Cicero and Compton.

2 THE COURT: Well, I'm going to let you go ahead  
3 and then I'll decide the extent, if at all, that I'm going  
4 to consider it. This is a factor I think and -- well, go  
5 ahead.

6 MR. FARRELL: I'll make it -- I'll make it easier.

7 BY MR. FARRELL:

8 Q. The New England Journal of Medicine is one of the  
9 articles that supports your conclusion that there is a  
10 causal association between opioids and heroin; agreed?

11 A. Agreed.

12 Q. Now, in case there's any doubt -- and I'm going to test  
13 your memory. How many -- what other sources are you aware  
14 of that are relied upon by epidemiologists in the field that  
15 support the causal association between prescription opioids  
16 and heroin?

17 A. You know, just knowing that 70-80 percent of people who  
18 use heroin start with prescription opioids is kind of one  
19 piece of the puzzle, but there's also a lot of prospective  
20 studies where they take people who use prescription opioids  
21 and people who don't use prescription opioids and follow  
22 them forward to see what the risk of heroin initiation is.

23 And I think Banerji, which is cited in my report, is a  
24 good example of that. They took Veterans Administration  
25 data, which is very well characterized, and it was over



1 3,000 people. And they followed veterans who, you know,  
2 were between 40 and 60 years old, followed them forward, and  
3 some of them had used prescription opioids, some of them  
4 haven't, and they looked to see the time to first heroin use  
5 and whether that was different between the two groups.

6 And the group that used prescription opioids was more  
7 than five times more likely to use heroin. They then  
8 compared the strength of that association to other risk  
9 factors like other drug use, marijuana use, cocaine use,  
10 stimulant use. And prescription opioid use was by far the  
11 strongest risk factor for transition to heroin compared with  
12 other kinds of drugs, compared with demographics that are  
13 also related to heroin initiation.

14 The five times more likely in the prescription opioid  
15 use was the strongest risk factor. And so, that's often  
16 cited as a strong piece of the puzzle that we use to come to  
17 these causal conclusions because it meets that strength of  
18 association piece that I spoke about earlier. Temporality.  
19 You know, it was established that the prescription opioids  
20 came first. And then it's consistent with all these other  
21 studies. And so, epidemiologists use that evidence to come  
22 to causal conclusions.

23 **Q.** I'm going to try to use this as a rubric or as a  
24 framework. Can you bring up Page 1 of the demonstrative?

25 **MR. FARRELL:** May I approach, Judge?

1 THE COURT: Yes.

2 BY MR. FARRELL:

3 Q. All right. On the left-hand side, I've attempted to  
4 capture instead of writing on a chalkboard the factors that  
5 you have mentioned that come from the Bradford Hill rubric.  
6 Have I written down accurately your testimony today about  
7 the various factors that go -- that an epidemiologist uses  
8 when trying to determine whether an association is causal?

9 A. Yes.

10 Q. Okay. All right. So let me see if I can get this to  
11 work. Rx opioids. And then I'm going to use an empty blank  
12 and I'm going to write heroin.

13 And so, what we're looking for is if there is a -- an  
14 association between prescription opioids and heroin,  
15 correct?

16 A. Yes.

17 Q. And in some of the studies that you mention it talks  
18 about that they can find association, but not causal,  
19 correct?

20 A. Some of the studies say that, yes.

21 Q. So, we'll get that in a minute like for Ghertner. What  
22 I want you to do is to explain to the judge why in this case  
23 you believe you can go from an association to causal?

24 A. That's what epidemiologists do. So, any one study  
25 usually is not sufficient evidence to decide whether an

1 exposure outcome relationship is causal. But I take a step  
2 back and look at the entire body of the literature and so --

3 **Q.** You do so by applying the key factors, correct?

4 **A.** I do.

5 **Q.** And looking at the key factors, number one, dose  
6 response relationship, we've talked about that, correct,  
7 with your -- with your testimony so far?

8 **A.** Yes. And there are other studies that I can speak to,  
9 as well, on that topic, if you'd like me to.

10 **Q.** We'll get there, I think, with the other ones.

11 **A.** Okay.

12 **Q.** But we also have the temporal relationship, which is  
13 number 2.

14 **A.** Uh-huh.

15 **Q.** I'm just creating a record now. 3, strength of  
16 association, correct?

17 **A.** Yes.

18 **Q.** 4 is consistency?

19 **A.** Yes.

20 **Q.** 5 is biologic plausibility?

21 **A.** Yes.

22 **Q.** And 6 is consideration of alternative explanations?

23 **A.** That's right.

24 **Q.** Now, I think that we have talked about everything  
25 except for number 5 with regard to whether or not there is a

1 causal association between prescription opioids and heroin.  
2 Do you have -- have you performed an analysis or tried to  
3 identify from the medical literature whether or not there's  
4 a biologic plausibility for a causal relationship between  
5 prescription opioids and heroin?

6 **A.** Yes.

7 **Q.** And what is your determination?

8 **A.** It is biologically possible.

9 **Q.** And that's from the epidemiology literature?

10 **A.** Yes. They have similar pharmacological properties.

11 **Q.** All right. Now, in addition to exposure to  
12 prescription opioids and heroin, you also undertook to  
13 measure the exposure in Huntington-Cabell County, correct?

14 **A.** Yes.

15 **Q.** All right. So, let's talk for a second about what that  
16 means. So, we have exposure and we have harm. So, in order  
17 to make that measurement or make that causal association, we  
18 have to define the exposure. Have you undertaken the task  
19 as an epidemiologist to look at exposure to prescription  
20 opioids across the country?

21 **A.** Yes.

22 **Q.** Have you also done so yourself and seen in the medical  
23 literature the same analysis at a state level?

24 **A.** Yes.

25 **Q.** And have we asked you to do so on behalf of

1       Huntington-Cabell County?

2       **A.**     Yes.

3       **Q.**     And would you please tell the Court your findings?

4       **A.**     I looked at the literature on the distribution of  
5       prescription opioids and the trends over time, which is my  
6       particular area of expertise.  Nationally, at the state  
7       level, and in Cabell and Huntington, and what I found was  
8       that there was an enormous increase in the supply of  
9       prescription opioids nationally.

10           In West Virginia, it was higher than it was nationally.  
11       And in Cabell County, it was higher than it was in West  
12       Virginia.  So, if you kind of think about those three  
13       geographic areas, there was an increase in the prescription  
14       opioid supply in all three, but the concentration of that  
15       increase was much greater in Cabell than in the rest of the  
16       country.

17       **Q.**     Now, is this your opinion or is this an epidemiological  
18       fact?

19       **A.**     It's based on the epidemiological data.

20       **Q.**     All right.  So, if we say exposure, is exposure --  
21       let's try to find another word that helps me understand.  Is  
22       supply another word for exposure?

23       **A.**     Yes.

24       **Q.**     All right.  Now, other than the relationship from  
25       prescription opioids to the initiation of heroin, have you

1 undertaken the task to try to determine whether or not there  
2 is a causal association between exposure or supply of  
3 prescription opioids and harms?

4 **A.** Yes.

5 **Q.** And in your analysis have you reached to a reasonable  
6 degree of epidemiological certainty an opinion in this  
7 regard?

8 **A.** Yes.

9 **Q.** Will you tell the judge what exposures or supplies of  
10 prescription opioids, what causal associations you found of  
11 related harms in Huntington-Cabell County?

12 **A.** I reviewed the literature and compared them to all of  
13 the key factors that we look at and they all point in one  
14 direction and that is that increased exposure to the supply  
15 of prescription opioids caused harms in Cabell-Huntington.

16 **Q.** Now, let's identify which harms you have identified.  
17 Can you list them for the judge? And we'll talk about them  
18 each individually?

19 **A.** Sure. Opioid Use Disorder. I would also list  
20 diversion and non-medical use. I would list hospitalization  
21 and overdose. I would also list, although we've already  
22 talked about it, transition to other opioids, in particular,  
23 heroin and fentanyl.

24 **Q.** How about -- how about morbidity or deaths?

25 **A.** Yes. I would also list death.

1 Q. How about NAS?

2 A. Yes. I would list NAS, as well.

3 Q. Have you also looked into related harms for IV  
4 injections, such as endocarditis, HIV and hepatitis?

5 A. Yes.

6 Q. And how do we classify those IV-injectable types of  
7 injuries? Is there a label or a short word for me to say?

8 A. Bloodborne diseases, I think, would be the common  
9 shorthand.

10 Q. All right. So, in your final analysis do you have an  
11 opinion whether or not exposure or supply of prescription  
12 opioids has a positive causal association with Opioid Use  
13 Disorder?

14 A. Yes.

15 Q. Diversion or non-medical use of opioids?

16 A. Yes.

17 Q. Hospitalizations?

18 A. Yes.

19 Q. Overdoses?

20 A. Yes.

21 Q. Death?

22 A. Yes.

23 Q. Neonatal Abstinence Syndrome?

24 A. Yes.

25 Q. And bloodborne diseases?

1       **A.**     Yes.

2       **Q.**     Such as endocarditis, HIV and hepatitis?

3       **A.**     Yes.

4       **Q.**     And this is your specific -- your opinion is specific  
5       causal association to exposure and supply of prescription  
6       opioids to the peoples of Huntington-Cabell County, West  
7       Virginia and these related harms?

8               MR. HESTER: Object as leading.

9               THE COURT: Well, the question is leading, but I  
10       will allow her to answer it.

11              THE WITNESS: Yes.

12              BY MR. FARRELL:

13       **Q.**     Putting it into other words -- well, and we'll come  
14       back to this in the end, but what I would like you to do now  
15       is I would like for you on a technical basis to let's now go  
16       through each of these key factors 1-6 from the medical  
17       literature from your analysis and tell the judge why you  
18       believe that the relationship that we've just discussed for  
19       each of these items is not just an association, but causal.

20              Let's start with dose response relationship. Will you  
21       please tell the Court your assessment and analysis?

22       **A.**     Sure. So, there's a number of studies in the  
23       literature that I've looked at, dose and duration, which are  
24       two key factors that we look at when we're looking at  
25       exposure to prescription opioids.



1           Duration can be considered a measure of dose because,  
2           as the duration goes on, you're exposed to a higher dose.  
3           This has been shown repeatedly in the epidemiological  
4           literature with regard to Opioid Use Disorder, both among  
5           people who are taking a prescription and among people who  
6           are using prescription opioids non-medically.

7           For example, I could point to an Edlund study from  
8           2014.

9           **Q.**   Let's stop for a second.

10          **A.**   Okay.

11          **Q.**   This is where the court reporter is going to be  
12          endeared.

13          **A.**   I'm trying to go slowly.

14          **Q.**   Will you spell Edlund?

15          **A.**   E-d-l-u-n-d.

16          **Q.**   And do you know which journal it was published in?

17          **A.**   I don't remember off the top of my head.

18          **Q.**   I'm sure I have that.  Somebody will provide a reminder  
19          very quickly.

20          If I showed you the article, would that help refresh  
21          your recollection?

22          **A.**   It would.

23                   MR. FARRELL:  Judge, may I approach?

24                   THE COURT:  You may.

25                   THE WITNESS:  It is published -- I'm sorry.

1 THE COURT: Take it back and then ask her.

2 MR. FARRELL: Yeah.

3 You got it?

4 THE WITNESS: Yes.

5 MR. FARRELL: Okay.

6 THE COURT: Did that refresh your recollection,  
7 Dr. Keyes?

8 THE WITNESS: It did.

9 BY MR. FARRELL:

10 **Q.** Okay. And so, where was the Edlund article published?

11 **A.** The Clinical Journal of Pain.

12 **Q.** Yes. Now, will you tell the judge the significance of  
13 the Edlund article?

14 **A.** It's one article that established a dose response  
15 relationship between use of prescribed opioids and these are  
16 people who had a prescription in a medical record and  
17 development of Opioid Use Disorder. It showed essentially  
18 that with each increase in the dose and the duration of  
19 opioid use there is a higher incidence, new onset of Opioid  
20 Use Disorder.

21 In fact, for people who are taking opioids for more  
22 than 90 days at a high dosage, those individuals were 122  
23 times more likely to develop Opioid Use Disorder compared to  
24 people in the same medical system who didn't use a  
25 prescribed opioid.

1       **Q.**    Now, 122 times, I would like to build into this a  
2       little bit, a little bit deeper, and I have screwed this up,  
3       I fear, but I am going to try anyway.

4               So, the Edlund article, what year is it from?

5       **A.**    2014.

6       **Q.**    Question number one. Is this article relied upon by  
7       epidemiologists in your field when performing research on  
8       opioid use and Opioid Use Disorder?

9       **A.**    Yes.

10      **Q.**    Is it respected?

11      **A.**    Yes.

12      **Q.**    Is it subject to any underlying question of veracity?

13      **A.**    Not that I'm aware of.

14      **Q.**    Now, the essence of the Edlund article was that it  
15      showed that there was a -- it quantified a factor of 122  
16      times what?

17      **A.**    More -- 122 times greater incidents of Opioid Use  
18      Disorder.

19      **Q.**    If what?

20      **A.**    If you used prescription opioids for more than 90 days  
21      at a high dosage.

22      **Q.**    High dosage. Now, did it also measure medium dosage?

23      **A.**    Yes.

24      **Q.**    And what did it find?

25      **A.**    I believe those at a medium dosage were about 15 times

1 more likely.

2 **Q.** And did it measure low dosage?

3 **A.** I actually believe the low dosage was 15 times and the  
4 medium dosage was about 26 or 27 times.

5 **Q.** Would it help to refresh your recollection or are you  
6 good with those numbers?

7 **A.** I think it's in that ballpark. We can -- I have it in  
8 my report. I can pull it up and look at it very quickly.

9 **Q.** No. Ballpark is good enough for me to make this -- to  
10 make this.

11 Now, I know I struggle with this language sometimes but  
12 is this -- does this quantify the relationship between  
13 opioid exposure and Opioid Use Disorder?

14 **A.** It does.

15 **Q.** All right. So, do you recall the Bradford Hill, the  
16 guy that wrote the first article on these factors?

17 **A.** I do.

18 **Q.** Did he also attempt to quantify the association between  
19 smoking and cancer?

20 **A.** And lung cancer, yes.

21 **Q.** And what -- what magnitude did he determine? What was  
22 the relationship in that case?

23 **A.** In his original 1950 case control study, the magnitude  
24 of the relationship was 13. So, smokers were 13 times more  
25 likely to develop lung cancer than non-smokers.

1 Q. And what -- at the time and today, what is 13 times  
2 considered? Is there an adjective?

3 A. Very large association.

4 Q. Would you call it strong?

5 A. I would.

6 Q. Is it actually referenced as strong in some texts and  
7 literature?

8 A. The relationship between smoking and lung cancer is  
9 generally considered to be strong.

10 Q. And if 13 times greater risk is considered strong, what  
11 would 122 times be considered?

12 A. Extraordinarily strong.

13 Q. Okay. What else? I'm asking for some adjectives.

14 A. I have rarely seen a strength of association in the  
15 epidemiological literature that is 120 --

16 THE COURT: I'm a little bit confused. 122 times  
17 what? I missed that.

18 THE WITNESS: So, the people who are using  
19 opioids, that are prescribed opioids, who are using them  
20 90 days or more at a high dosage, their risk of developing  
21 Opioid Use Disorder is 122 times greater than people who  
22 don't use opioids.

23 THE COURT: And you explained that clearly awhile  
24 ago and I didn't catch it and you had to do it again, right?

25 THE WITNESS: That's -- I'm -- I'm a professor.

1 This is what we do.

2 MR. FARRELL: It took me two times.

3 BY MR. FARRELL:

4 Q. Now --

5 A. This study also establishes temporality, which is  
6 really important, and I think Edlund did that really well,  
7 Edlund and colleagues, not to ignore that there were other  
8 co-authors, probably other epidemiologists.

9 Q. So now, I'm going to go back to what I was told to do  
10 before.

11 THE COURT: I think this is a good time for a  
12 break, Mr. Farrell, and we'll be in recess for about ten  
13 minutes.

14 You can step down during the break.

15 THE WITNESS: Thank you very much.

16 (Recess taken)

17 (Proceedings resumed at 2:36 p.m. as follows:)

18 THE COURT: Dr. Keyes, if you'd come back up,  
19 please.

20 BY MR. FARRELL:

21 Q. Welcome back, Dr. Keyes. So I think we finished --  
22 I think we finished up with the Edlund piece, so I'm  
23 just going to put one little checkmark there.

24 The second one I wanted to talk about was Ghertner.  
25 And this is a 2019 article. And are you familiar with the

1 Ghertner article?

2 **A.** Yes.

3 **Q.** That's G-h-e-r-t-n-e-r. Is this a dose response  
4 relationship factor that you relied upon?

5 **A.** It is.

6 **Q.** Okay. Will you tell the Judge the results of the  
7 Ghertner study?

8 MR. HESTER: Your Honor, may I object again? We  
9 weren't given a list of any documents that were going to be  
10 used with this witness. And this -- we're now putting up a  
11 study that I didn't know would be used today for purposes of  
12 the direct examination.

13 MR. FARRELL: I'm not putting up any slides.

14 MR. HESTER: Well, I know but he's putting up an  
15 article that ideally I would have read so I would know what  
16 was in it if it was going to be used this way.

17 THE COURT: Well, shouldn't you have put them on  
18 notice of the things that you were going to question him  
19 about that were the basis for her opinions?

20 MR. FARRELL: Well, Judge, this is our Rule 26  
21 disclosure. This is in her report. This has been deposed.  
22 This is the basis for her opinions.

23 THE COURT: This is in her report, references to  
24 this?

25 MR. FARRELL: Yes, sir.

1 THE COURT: I'll overrule the objection and let  
2 you go ahead.

3 MR. FARRELL: Now, to be fair, her report is quite  
4 extensive. And, so, I'm not going to be going through all  
5 48 pages.

6 THE COURT: Well, let's get rolling here. We need  
7 to get some people out of town this afternoon if we can.

8 MR. FARRELL: Yes, sir.

9 BY MR. FARRELL:

10 **Q.** So will you tell the Court briefly how the Ghertner  
11 opinion supports your analysis finding a causal  
12 association between prescription opioids and related  
13 harms?

14 **A.** So this analysis used data on the amount of  
15 prescription opioids distributed in U.S. counties, and  
16 correlated the amounts by county with the level of  
17 opioid-related hospitalization.

18 And they found that each increase in the distribution  
19 of prescription opioids by county was associated with about  
20 four percent additional opioid-related hospitalizations.

21 So this study showed more supply, more  
22 hospitalizations. And that relationship was dose response.

23 **Q.** Okay. Now, for temporal relationship, will you tell  
24 the Court what evidence you found to support your opinions  
25 based upon the key factor of temporal relationships?



1     **A.**    So for temporal relationships what we're really looking  
2     for is people who didn't have a history of opioid use  
3     disorder before they were prescribed opioids, for example,  
4     or were heroin-naive before they started using prescription  
5     opioids.

6           And we want to establish that the cause precedes the  
7     effect. And that's well documented in the epidemiological  
8     literature that that means 80 percent of people used  
9     prescription opioids before they used heroin, there is a  
10    number of studies that show that among people who have never  
11    had an opioid use disorder, a portion of those who are  
12    prescribed opioids go on to have an opioid use disorder and  
13    other -- a consistent body of evidence that shows that the  
14    cause precedes the effect.

15    **Q.**    Not to be cute, but is it difficult to acquire opioid  
16    use disorder if you're never exposed to opioids?

17    **A.**    Very difficult.

18    **Q.**    Versus if you're exposed to opioids, there is a  
19    temporal relationship with the onset of, of opioid use  
20    disorder?

21    **A.**    That's right.

22    **Q.**    Same thing with, say, mesothelioma. It's difficult to  
23    get mesothelioma without exposure to asbestos?

24    **A.**    Correct.

25    **Q.**    Versus lung cancer where you can get lung cancer

1 without smoking. But if you smoke, there's a higher, a  
2 higher relationship?

3 **A.** Well, and I think there's an analogy here too because  
4 there are people who use heroin who have never used a  
5 prescription opioid. And there are people who use  
6 prescription opioids who don't go on to heroin use.

7 It's a risk factor just like smoking is a risk factor  
8 for lung cancer where if you use a prescription opioid, that  
9 is by far the strongest risk factor for development of  
10 opioid use disorder and heroin compared to not using  
11 prescription opioids. But it's a risk factor.

12 **Q.** So is there medical literature to support your analysis  
13 under the temporal relationship factor?

14 **A.** Yes.

15 **Q.** The next factor, strength of association. Would you  
16 tell the Judge how the strength of the association weighs  
17 into your analysis regarding causal associations?

18 **A.** Yes. I think some of the studies that we've already  
19 mentioned demonstrate how strong this association is. And,  
20 generally, I think there's consensus in my field that the  
21 strongest risk factor for opioid use disorder is  
22 prescription opioid exposure.

23 **Q.** The next factor is consistency. What does consistency  
24 mean and how does it apply to this case?

25 **A.** Consistency means do you observe the same relationship

1 in -- do independent people, independent research groups,  
2 independent epidemiologists, and independent populations,  
3 you know, do you observe the same relationship over and over  
4 and over again in different studies that are conducted in  
5 different ways.

6 **Q.** We've discussed biologic plausibility. But just to  
7 re-emphasize, have you examined whether or not the medical  
8 literature contains references to the biological  
9 plausibility in support of your analysis?

10 **A.** Yes.

11 **Q.** What about the consideration of alternative  
12 explanations? I think this deserves a little more  
13 attention. Will you explain to the Judge your analysis of  
14 that factor?

15 **A.** Yes. So if you're looking at, you know, does  
16 prescription opioid use cause harm, the question is: Well,  
17 what other factors in the environment could plausibly  
18 explain that relationship other than prescription opioids?

19 Certainly one that's been discussed a lot is economic  
20 conditions. And, so, you know, you might say, well, it's  
21 not the prescription opioids. It's areas with economic  
22 deprivation and people who are more vulnerable to develop  
23 drug addiction in those areas.

24 So that's been a big focus of a lot of the scientific  
25 literature trying to tease apart cause and effect with

1 respect to something like economic conditions as an  
2 alternative explanation.

3 And what's been demonstrated in well-done studies --  
4 and I would point to Ruhm for example, R-u-h-m, as a paper  
5 that's cited in my report who demonstrated that economic  
6 conditions really, when you analyze the data in a rigorous  
7 way, play a relatively small role in the opioid-related  
8 harms that we've seen in the United States over the last 15  
9 years.

10 He captured economic conditions with a number of  
11 different really reliable metrics, and I think in his  
12 abstract and study suggests that less than 10 percent of the  
13 overdose crisis that we've seen in America can be attributed  
14 to something like economic conditions.

15 And by far, the most reliable and strongest determinate  
16 of the overdose crisis is the availability and price of  
17 prescription opioids.

18 **Q.** All right. Are these the only six factors in the  
19 Bradford Hill analysis?

20 **A.** Bradford Hill had other factors in his 1965 paper.  
21 And, so, yes, there were other -- Bradford Hill had other  
22 factors in that paper.

23 **Q.** All right. So to be fair to the Court and to opposing  
24 parties, is there a balance of literature out there that  
25 would raise significant dispute with your conclusions?

1       **A.**    Not that I'm aware of.

2       **Q.**    At this time, I'd like to kind of switch over and talk  
3       about some of your data findings as we discussed yesterday  
4       as you built upon Dr. Smith. And I'd like to go first to  
5       Page 2 which is Figure 3.

6             Dr. Keyes, this is Figure 3 from your report. Do you  
7       recognize it?

8       **A.**    I do.

9       **Q.**    Give us a second for the little things to turn off.  
10      Okay.

11            Will you orient the Judge -- first, what is it that  
12      we're looking at and where did you get the data from?

13      **A.**    So this -- these are data on overdose death rates for  
14      all drugs, so whether opioids or something else.

15            The red line is the overdose death rate age-adjusted by  
16      year for the whole country. The green line is for West  
17      Virginia. And the blue line is for Cabell County.

18            And I obtained these data from the Centers for Disease  
19      Control, publicly available information on causes of death  
20      in the United States.

21      **Q.**    Now, I'm going to apologize. I'm going to have to get  
22      a little technical for the record.

23            The age-adjusted rate on the X axis, what does that  
24      mean?

25      **A.**    That means that it is the number of overdoses per

1 100,000 people in each of these years, and it's adjusted for  
2 age.

3 And, so, if two counties have really different -- you  
4 know, if one county had a lot of older folks and one,  
5 another county had a lot of younger folks, you would expect  
6 there to be differences in the overdose rate just because  
7 there is differences in age.

8 So this adjusts out any compositional differences in a  
9 county or a state with respect to the age of the population.

10 **Q.** So let me see if I can get this clean.

11 Do you have an opinion as to whether or not there is an  
12 opioid epidemic in the United States?

13 **A.** I do.

14 **Q.** What is that opinion?

15 **A.** There is an opioid epidemic in the United States.

16 **Q.** And, respectfully, is there any epidemiologist in the  
17 country that you know of that would disagree with that, that  
18 opinion?

19 **A.** I don't know any epidemiologist who would disagree.

20 **Q.** Now, do you also believe that there is an opioid  
21 epidemic in West Virginia?

22 **A.** I do.

23 **Q.** And do you believe there is presently an opioid  
24 epidemic in Huntington/Cabell County, West Virginia?

25 **A.** I do.

1       **Q.**   Looking at this data, does it demonstrate that the  
2       overdose death rates for all drugs in the United States has  
3       gradually increased over time?

4       **A.**   Yes.

5       **Q.**   And does your data finding show that for the most part,  
6       West Virginia has always been in excess of the national  
7       rate?

8       **A.**   For most years, yes.

9       **Q.**   And that in Cabell County, West Virginia,  
10      Huntington/Cabell County, West Virginia, the rate is in  
11      excess of the state which is in excess of the nation?

12      **A.**   That's right.

13      **Q.**   Now, you'll see that there's this sudden spike of  
14      overdose death rates from 2013 on. Have you conducted an  
15      analysis to determine within the "all drug" classification  
16      what that is?

17      **A.**   Yes.

18      **Q.**   I'd like to go to the next slide. I'm sorry. Before  
19      we get to that one, let's go back to the one we were just at  
20      to finish. Go to the next one for the state. Yep, that  
21      one.

22             So do you recognize Figure 6?

23      **A.**   Yes.

24      **Q.**   What is Figure 6?

25      **A.**   That is a map of West Virginia. And I've colored in

1 each county with their overdose death rate per 100,000  
2 people average from 2014 to 2018.

3 **Q.** So we've already established that West Virginia is  
4 higher than the national average. This is a heat map of the  
5 State of West Virginia by county; correct?

6 **A.** Yes.

7 **Q.** And I'm not going to quiz you too much about your  
8 geography, but I think you know the answer. Is there one  
9 particular county here that is darker than the others?

10 **A.** Cabell County.

11 **Q.** And that's in the left-hand corner; correct?

12 **A.** Yes.

13 **Q.** And why is it darker than the other counties?

14 **A.** Because it has the highest rate of overdose.

15 **Q.** So is it fair to say that for the true overdose deaths  
16 that Cabell County has the highest rate in the State of West  
17 Virginia, and that West Virginia is continuously in excess  
18 of the national average?

19 **A.** Cabell County is -- I believe I said in my report I  
20 believe it's in the top five counties in the country in  
21 terms of overdose deaths.

22 **Q.** All right. Now, we can go to the next slide. This is  
23 slide 4.

24 And the difference between the Figure 3 and Figure 7 is  
25 what, Dr. Keyes?



1     **A.**    This, this is just sub-setting the "all overdose"  
2     category to all overdoses that included opioids.

3     **Q.**    And, so, before we talk about all overdoses, this is  
4     now a subset of just all opioids. And are the trends  
5     consistent with what you saw for all overdoses?

6     **A.**    Yes.

7     **Q.**    And, again, Cabell County is in excess of the State of  
8     West Virginia which is in excess of the national trend.  
9     Agreed?

10    **A.**    Generally, yes.

11    **Q.**    All right. Now let's go to Figure 8. Do you recognize  
12    Figure 8?

13    **A.**    I do.

14    **Q.**    And what is Figure 8?

15    **A.**    That is an estimate of the overdose death rate for  
16    prescription opioids.

17    **Q.**    And where did you obtain this information?

18    **A.**    This is an estimate that I created based on the CDC's  
19    numbers.

20    **Q.**    And, again, what, what are your findings in this  
21    regard?

22    **A.**    Generally, you see similar patterns where West Virginia  
23    is higher than the country. And, generally, although  
24    there's a little bit more variation for prescription  
25    opioids, Cabell County is consistently higher than West

1 Virginia.

2 **Q.** Now, go to Figure 9. And what is Figure 9?

3 **A.** That is the Cabell County overdose death rate by type  
4 of drug.

5 **Q.** And where did you get this data from?

6 **A.** From Dr. Smith.

7 **Q.** Okay. And please explain to the Court what your  
8 analysis of Dr. -- of the data compiled by Dr. Smith  
9 reveals.

10 **A.** This reveals that in Cabell County throughout much of  
11 the 2000s overdoses in the county were primarily driven by  
12 prescription opioids.

13 Then in the -- after about 2012, '13, '14, heroin  
14 overdoses started to increase. And then by 2015 we really  
15 saw an exponential increase in fentanyl overdoses.

16 **Q.** Now, go to Figure 10, please. What -- do you recognize  
17 Figure 10 from your report?

18 **A.** I do.

19 **Q.** What is it?

20 **A.** This is the rate per 100,000 hospital births of infants  
21 diagnosed with Neonatal Abstinence Syndrome.

22 **Q.** The Court has already heard the description of Neonatal  
23 Abstinence Syndrome from Dr. Werthammer, so we won't go into  
24 detail about it. But I do want you to describe for him what  
25 your findings are for the difference between the national

1 numbers and West Virginia numbers and then Cabell County's  
2 numbers.

3 **A.** Consistent with the other trends that we observed, West  
4 Virginia is generally higher in terms of NAS than the  
5 country, substantially higher. And Cabell County is  
6 generally higher than West Virginia as a whole.

7 **Q.** So when you were comparing Neonatal Abstinence Syndrome  
8 from Figure 10 in 2016, 2017 will you tell the Court -- read  
9 into the record what is the rate per 1,000 hospital births  
10 as documented in Figure 10 for Cabell County.

11 **A.** 62.3 per 1,000 hospital births are babies diagnosed  
12 with NAS.

13 **Q.** And what is the rate for 100,000 hospital births for  
14 the State of West Virginia?

15 **A.** 56.2.

16 **Q.** And what is -- in the same time frame, what is the rate  
17 in the United States?

18 **A.** Seven.

19 **Q.** So what factor greater is that?

20 **A.** It's about seven to nine depending on the location.

21 **Q.** All right. Go to the next slide, please. This is  
22 Figure 13. Do you recognize -- I'm sorry, Figure 12. Do  
23 you recognize Figure 12?

24 **A.** Yes.

25 **Q.** What is Figure 12?

1       **A.**    This is opioid-related hospital use.

2       **Q.**    For which geographic area?

3       **A.**    I believe this is West Virginia.

4       **Q.**    And what does it indicate?

5       **A.**    It indicates that hospital use for opioid-related  
6 reasons is increasing in West Virginia since 2009.

7       **Q.**    Now, in general, so far, for all of these  
8 opioid-related harms, is it fair to say that we have seen an  
9 increase over time?

10      **A.**    Yes.

11      **Q.**    And is there a causal association between this increase  
12 in -- between what we have seen with the increase in time  
13 for these opioid-related harms and the supply or exposure of  
14 prescription opioids in Huntington/Cabell County?

15      **A.**    Yes.

16      **Q.**    And what is that association?

17      **A.**    There's a causal association between the supply of  
18 prescription opioids in Cabell/Huntington and the increase  
19 in opioid-related harms.

20      **Q.**    And that includes opioid-related hospital use in the  
21 State of West Virginia?

22      **A.**    Yes.

23      **Q.**    So, in general, the opioid-related hospital,  
24 hospitalizations in the state have been increasing since  
25 2009. Agreed?

1       **A.**     Agreed.

2       **Q.**     And where did you get this data from?

3       **A.**     This is from a dataset -- it's a statewide publicly  
4       available dataset called HCUP. It's Hospitalization Care  
5       and Utilization Project I think.

6       **Q.**     Okay. Go to the next slide, Figure 13. Now, this is  
7       prevalence of opioid use disorder in the United States, West  
8       Virginia, and Cabell County. Would you please tell the  
9       Judge where you got this data from and how you came up with  
10      the numbers?

11      **A.**     Sure. This is an estimate that I created for opioid  
12      use disorder. There's -- we have no census of people who  
13      have opioid use disorder in the country or in Cabell County,  
14      so we have to estimate it.

15             And I used a very reliable and well-documented set of  
16      methods to estimate the prevalence of opioid use disorder in  
17      Cabell County.

18             It starts with I think a pretty -- a method that I can  
19      describe well, which is if you know the probability that  
20      someone who has an opioid use disorder dies and you know the  
21      number of deaths, you can just do some simple algebra to  
22      figure out how many people have opioid use disorder. So  
23      that's kind of the, the baseline of the calculation.

24             So I looked in the medical literature. And in 2019  
25      there was a meta-analysis that was published by a very, a

1 very well regarded group who conducts meta-analyses all the  
2 time. And they had, in fact, done this same meta-analysis  
3 several years before, but then updated it in 2019 with more  
4 papers.

5 And they looked at every single study that has taken a  
6 population with opioid use disorder and measured how many of  
7 them died of an overdose. And they meta-analyzed them,  
8 which means they took all the studies, put them together,  
9 and got an average.

10 And, so, I took that meta-analytic estimate of the  
11 probability that you die of an overdose if you have opioid  
12 use disorder, which was .52 per 100,000 persons. And then I  
13 took the number of people who died of a drug overdose in  
14 Cabell County and I divided it by .0052.

15 Now, that's kind of the, the basic version. But you  
16 have to do some adjustments to that. You know, that's not  
17 going to be the end of the story, especially because after  
18 2015, the death rate from using opioids began to increase.  
19 And that's due to the introduction of synthetic opioids.

20 So I thought, okay, I can't rely on this one estimate  
21 of the probability that you die given that you have opioid  
22 use disorder. I need two estimates.

23 So I had to figure out what's the probability that you  
24 die of an overdose if you use synthetic opioids.

25 So to figure that out, I used another epidemiological

1 method that is very well-established in the literature  
2 called an interrupted time series method.

3 And that's where if you have a sudden change in the  
4 environment, like the introduction of fentanyl, you can  
5 capitalize on that change to figure out how much the  
6 introduction of this new exposure of fentanyl changed the  
7 environment.

8 So I took the number of overdoses from 2013 to 2015 and  
9 figured out how much more of the overdose rate went up in  
10 just that very short period as an estimate of how much more  
11 likely you were to die given that fentanyl is now in the  
12 environment.

13 So I created two death rates; one for the probability  
14 that you die of an overdose given that you use opioids that  
15 don't have fentanyl, and one for if you do have fentanyl and  
16 then waited each year for the distribution of death that  
17 involved synthetic opioids versus not which is important  
18 because that then captures the increase in prevalence of  
19 synthetic opioids in overdoses over time.

20 So using those two estimates, and the waiting factor  
21 for the probability of synthetic opioids, I arrived at a  
22 prevalence of opioid use disorder by year.

23 **Q.** Okay. Dr. Keyes, have you been deposed on this subject  
24 matter before?

25 **A.** Yes.

1 Q. Okay. So I'm going to try to make the short version of  
2 this. You did a study based upon methodology used commonly  
3 by epidemiologists; correct?

4 A. Yes.

5 Q. And that you acquired information for every county in  
6 the United States to do an epidemiological sound study to  
7 determine the prevalence of opioid use disorder. Agreed?

8 A. I did.

9 Q. And you're in the process of getting this published in  
10 a peer-reviewed journal?

11 A. Yes.

12 Q. Which journal is considering it right now?

13 A. *Addiction*.

14 Q. So to use the simplest terms I can, you used a  
15 mathematical model that epidemiologists routinely rely upon  
16 in your field to perform a calculation to determine the  
17 prevalence of opioid use disorder by county across the  
18 country; correct?

19 A. Yes.

20 Q. And this is a graphic representation of the results for  
21 Cabell County, West Virginia, and national?

22 A. Yes. And I went a step further for Cabell County in  
23 particular.

24 I should clarify the study I have under peer-review is  
25 for the whole country. And I really wanted to make sure



1 that I had a reliable estimate for Cabell County.

2 And, so, in the course of writing my report, I reached  
3 out to people in Cabell County who are involved in data and  
4 who collect data on opioid use disorder. And I obtained  
5 another estimate from the health systems in Cabell and  
6 Huntington to --

7 MR. HESTER: Your Honor, two points.

8 First of all, this is the first time that we have heard  
9 that Dr. Keyes has a paper under peer-review that would be  
10 publishing this proposition around her estimates.

11 So it seems to us that if the plaintiffs are relying on  
12 a peer-reviewed study that she -- or that -- a study that  
13 she has under peer-review now that she's planning to  
14 publish, that should be produced to us.

15 Second point, Dr. Keyes is now going to be discussing  
16 an affidavit from a Todd Davies I believe. Mr. Davies was  
17 himself designated as an expert and the Court struck his  
18 testimony on the basis of untimely disclosure by the  
19 plaintiffs. He was going to provide the estimate Dr. Keyes  
20 is now going to testify to.

21 We believe it's not proper for Dr. Keyes to testify to  
22 this estimate from Dr. Davies since his testimony was  
23 stricken.

24 THE COURT: Ms. Hardin.

25 MS. HARDIN: We would move to strike the

1 references to the peer-reviewed article that she has just  
2 discussed for the reasons that Mr. Hester has stated. We  
3 don't have it. She's not relied on it previously. It's not  
4 in her report. And it shouldn't be part of what the Court  
5 considers in this case.

6 MS. MCCLURE: Join both of those, Your Honor.

7 THE COURT: How, how significant to her testimony  
8 is this peer-reviewed study?

9 MR. FARRELL: None.

10 THE COURT: Well, then, I'm going to grant the  
11 motion to strike.

12 MR. FARRELL: Thank you.

13 BY MR. FARRELL:

14 Q. So let's simplify this. Todd Davies is a Ph.D. at  
15 Marshall University; correct?

16 A. That's what I understand.

17 Q. And he produced materials in this litigation. Agreed?

18 A. Yes.

19 Q. And you relied upon that or reviewed that in your  
20 materials?

21 A. I did.

22 Q. It's listed in your reference materials?

23 A. Yes.

24 Q. And did you cross-reference your findings in Figure  
25 13 --

1 THE COURT: Mr. Hester.

2 MR. HESTER: We requested the underlying data on  
3 which Dr. Davies relied for this affidavit that Dr. Keyes is  
4 going to testify to and we were denied access to the  
5 underlying data.

6 It's not -- we have a hearsay problem. We have a  
7 problem that this -- he was going to be testifying as an  
8 expert himself on these estimates and the Court struck that  
9 testimony. This is now a back-door way into something that  
10 the Court's already stricken and it raises a significant  
11 hearsay issue.

12 THE COURT: Well, here again, this is not that  
13 significant for her testimony and her opinions, is it?

14 MR. FARRELL: No. It's just validation that she  
15 is right.

16 THE COURT: Well, I'm going to sustain the  
17 objection to that.

18 MR. FARRELL: Thank you, Your Honor.

19 BY MR. FARRELL:

20 **Q.** So let's get to the whole reason that we're getting  
21 to this ultimate conclusion. Have you been able to, to  
22 a reasonable degree of epidemiological certainty, been  
23 able to determine the prevalence of opioid use disorder  
24 in Huntington/Cabell County for the most recent time  
25 period?

1       **A.**    Yes.

2       **Q.**    Okay.  And, so, what is the most recent time period?

3       **A.**    In this it's 2018.

4       **Q.**    So as of 2018, what was -- what do you estimate to be  
5       the prevalence of opioid use disorder in Huntington/Cabell  
6       County, West Virginia?

7       **A.**    8.9 percent which I believe is reflective of about  
8       8,200 people in the county who have opioid use disorder.

9       **Q.**    That would be Cabell County, West Virginia?

10      **A.**    Yes.

11      **Q.**    Now, these graphs that we've been showing, these  
12      figures that are in your report, the time range for most of  
13      them is from 2006 to 2018.  Is there anything significant  
14      about that time range?

15      **A.**    No.  Sometimes we -- it's based on data available or  
16      other times it's just wanting to capture the most recent  
17      trend.

18                   THE COURT:  You had no data after 2018; is that --

19                   THE WITNESS:  We now do.  But at the time I  
20      submitted the report, we did not.

21      BY MR. FARRELL:

22      **Q.**    Let's go to Figure 16.  Do you recognize Figure 16?

23      **A.**    I do.

24      **Q.**    And will you tell the Judge -- I'm not even going to  
25      try this one.  Will you tell the judge what's depicted --

1 where the data comes from and what your findings are from  
2 Figure 16?

3 **A.** Sure. So in this graph what I was attempting to  
4 capture is if you take the number of people who died of an  
5 opioid overdose in Cabell County, how many of them are  
6 attributable to prescription opioids.

7 So you've got some people who don't have any history of  
8 prescription opioid use. And, so, that death wouldn't be  
9 attributable to prescription opioids.

10 So I wanted to develop some estimates using reliable  
11 epidemiological methods to provide some kind of estimate of  
12 that attribution. And, so, I went through it really in two  
13 steps.

14 The first is that the most well-accepted and reliable  
15 methodologies that we use in epidemiology is to use what's  
16 on the death certificate. And, so, if a prescription opioid  
17 was listed on the death certificate as a cause of the death  
18 at the time of the death, I consider that to be directly  
19 attributable to prescription opioids.

20 So that's what that red line is. Wait. No. Sorry.  
21 That's all opioid deaths. The green line is deaths that are  
22 directly attributable to prescription opioids. And each of  
23 those numbers is an actual number of deaths in the graph.

24 So, for example, in the most recent 2018, 45 deaths in  
25 Cabell County had a record of prescription opioids

1 contributing to the cause of death.

2 And then you have the people that don't have a  
3 prescription opioid directly contributing as a cause of  
4 death. But some of those are attributable to prescription  
5 opioids too because as we know from the literature,  
6 prescription opioid use is the biggest cause of subsequent  
7 other opioid use.

8 So I used epidemiological data to come up with an  
9 estimate of the proportion of people in West Virginia across  
10 these years who used prescription opioids before other  
11 opioids.

12 And I used that estimate as an estimate of the number  
13 of the overdose deaths that are indirectly attributable to  
14 prescription opioids because these are people who more  
15 likely than not started their opioid using trajectory with  
16 prescription opioids.

17 So, for example, in 2018, 45 people directly had a  
18 prescription opioid listed as a cause of death. Another 20  
19 people indirectly had prescription opioids contributing to  
20 their death, by my estimate, because they more likely than  
21 not started their trajectory of opioid use with a  
22 prescription opioid.

23 Now, there's one additional wrinkle that I should  
24 mention in this graph which was what to do with the  
25 synthetic opioid deaths because some of them are going to be

1 prescription opioids. Some of them are going to be illicit  
2 fentanyl. And the death certificate doesn't tell you which  
3 is which.

4 So to estimate how many of those deaths are directly  
5 attributable to prescription opioids versus indirectly  
6 attributable, I came up with an estimate of the pre-illicit  
7 fentanyl time period how many deaths there are in Cabell  
8 County that are just based on T40.4 which is the T code in  
9 the death certificate for synthetic opioids. And it's about  
10 three.

11 So three people per year in Cabell County prior to the  
12 increase in illicit fentanyl died because of exposure to a  
13 synthetic opioid, most likely a prescription synthetic  
14 opioid.

15 So I assumed that after the increase in illicit  
16 fentanyl, probably about three people a year were still  
17 dying of a prescription synthetic opioid overdose, and the  
18 remaining T40.4, or synthetic opioid deaths, were due to  
19 illicit fentanyl.

20 So three people per year who had the T40.4 on their  
21 death certificate who didn't have another prescription  
22 opioid, which a lot of them did, but if they didn't have any  
23 other prescription opioid and they just had T40.4, three of  
24 them I said, okay, I feel pretty confident that about three  
25 are directly attributable to prescription opioids.

1           And of the remainder, I used that same estimate of the  
2           relationship between prescription opioid use and subsequent  
3           non-prescription opioid use to apply the indirectly  
4           attributable to opioid category.

5           **Q.**    So you're saying this is reliable?

6           **A.**    Yes.

7           **Q.**    And that you believe it's true and accurate?

8           **A.**    Yes.

9           **Q.**    And it's based on epidemiology principles and  
10          methodology?

11          **A.**    It is.

12          **Q.**    A couple more questions. For purposes of the record,  
13          you, you mentioned that your paper recites a number of  
14          articles. Do you also rely upon the Cerda article,  
15          C-e-r-d-a?

16          **A.**    I do.

17          **Q.**    And the Dunn article, D-u-n-n?

18          **A.**    Yes.

19          **Q.**    And the Hall article?

20          **A.**    Yes.

21          **Q.**    And the Muhuri, M-u-h-u-r-i?

22          **A.**    Yes.

23          **Q.**    And Inciardi, I-n-c-i-a-r-d-i?

24          **A.**    Yes.

25          **Q.**    And the McCabe article?



1       **A.**     Yes.

2       **Q.**     That's M-c-C-a-b-e?

3       **A.**     That's right.

4       **Q.**     And Vowles, V-o-w-l-e-s?

5       **A.**     Yes.

6       **Q.**     And Schieber, S-c-h-i-e-b-e-r?

7       **A.**     Yes.

8       **Q.**     And Lankanau, L-a-n-k-a-n-a-u?

9       **A.**     Yes.

10      **Q.**     And these -- what do you rely on them for?  What  
11      proposition do they support?

12      **A.**     They support various propositions, all, I would say,  
13      under the rubric of the criteria that I've used to arrive at  
14      causal conclusions from the body of literature.

15      **Q.**     Dr. Keyes, do you have an opinion whether opioid supply  
16      or oversupply is a substantial factor in opioid-related  
17      harms including opioid addiction, abuse, morbidity, and  
18      mortality?

19      **A.**     Yes.

20      **Q.**     And what is that opinion?

21      **A.**     My opinion is that the opioid supply and oversupply is  
22      causally related to the opioid-related harms.

23      **Q.**     And you believe it's a substantial factor?

24      **A.**     Yes.

25      **Q.**     And does that include being a substantial factor in

1 opioid use disorder in Huntington/Cabell County?

2 **A.** Yes.

3 **Q.** And in overdoses in Huntington/Cabell County?

4 **A.** Yes.

5 **Q.** And in Neonatal Abstinence Syndrome?

6 **A.** Yes.

7 **Q.** And in hospitalizations?

8 **A.** Yes.

9 **Q.** And in blood-borne diseases such as endocarditis, HIV,  
10 and hepatitis?

11 **A.** Yes.

12 **Q.** And in mortality within fatal overdoses?

13 **A.** Yes.

14 **Q.** And do you have an opinion whether prescription opioid  
15 use is a substantial factor to the initiation and subsequent  
16 use of heroin?

17 **A.** I do.

18 **Q.** What is that opinion?

19 **A.** My opinion is that it is a substantial factor.

20 **Q.** So to make this as clean and simple as possible, is it  
21 your opinion to a reasonable degree of epidemiological  
22 certainty that there is a causal association between an  
23 increase in exposure to prescription opioids and the related  
24 harms that you testified to today?

25 **A.** Yes. I believe that the epidemiological literature and

1 the consensus in my field is very aligned and consistent in  
2 demonstrating that it is a causal relationship.

3 **Q.** And a substantial factor?

4 **A.** And a substantial factor.

5 MR. FARRELL: Judge, can I have a moment?

6 THE COURT: Yes.

7 (Pause)

8 MR. FARRELL: Judge, we pass the witness.

9 THE COURT: Now, Mr. Hester.

10 MR. HESTER: Your Honor, I'm ready to start. I  
11 mean, if --

12 MR. FARRELL: Judge, I would -- excuse me. I'm  
13 sorry.

14 MR. HESTER: Go ahead.

15 THE COURT: Well, there was some discussion about  
16 pulling the plug at this point, wasn't there, so --

17 MR. FARRELL: That's a great idea, Judge.

18 MR. HESTER: I'm happy, I'm happy to pull the plug  
19 if the Court doesn't mind, but I also am cognizant that  
20 we've been making a point that there's pressure on the trial  
21 time and we wouldn't want this to somehow count against us.  
22 We're trying to hold to the schedule.

23 THE COURT: Well, I was informed you've got to go  
24 to Columbus.

25 MR. HESTER: I do. But, Your Honor, I can, I can

1 go a little later.

2 THE COURT: It's a long way from here and it's --

3 MR. FARRELL: Judge, we'll make it simple. We'll  
4 take the time on us and, and we won't be complaining about  
5 it.

6 MS. KEARSE: Cabell County.

7 THE COURT: Well, Dr. Keyes is going to have to  
8 come back anyway, obviously, because cross examination won't  
9 be completed in the next 45 minutes.

10 So I'm going to ask you to come back, be here at  
11 9:00 Monday morning, Dr. Keyes, and we'll proceed with  
12 giving the attorneys for the defendants a shot at you. And  
13 I hope you enjoy the weekend.

14 THE WITNESS: Thank you.

15 THE COURT: All right. Is there anything else to  
16 take up before we quit?

17 MR. HESTER: Thank you, Your Honor. Have a good  
18 weekend.

19 THE COURT: All right. I'll see everybody at  
20 9:00 Monday morning.

21 (Trial recessed at 3:18 p.m.)  
22  
23  
24  
25

## 1 CERTIFICATION:

2 I, Ayme A. Cochran, Official Court  
3 Reporter, and I, Lisa A. Cook, Official Court Reporter,  
4 certify that the foregoing is a correct transcript from  
5 the record of proceedings in the matter of The City of  
6 Huntington, et al., Plaintiffs vs. AmerisourceBergen  
7 Drug Corporation, et al., Defendants, Civil Action No.  
8 3:17-cv-01362 and Civil Action No. 3:17-cv-01665, as  
9 reported on June 11, 2021.

10  
11 S\Ayme A. Cochran

12 Reporter

13 s\Lisa A. Cook

14 Reporter

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16 June 11, 202117 Date  
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